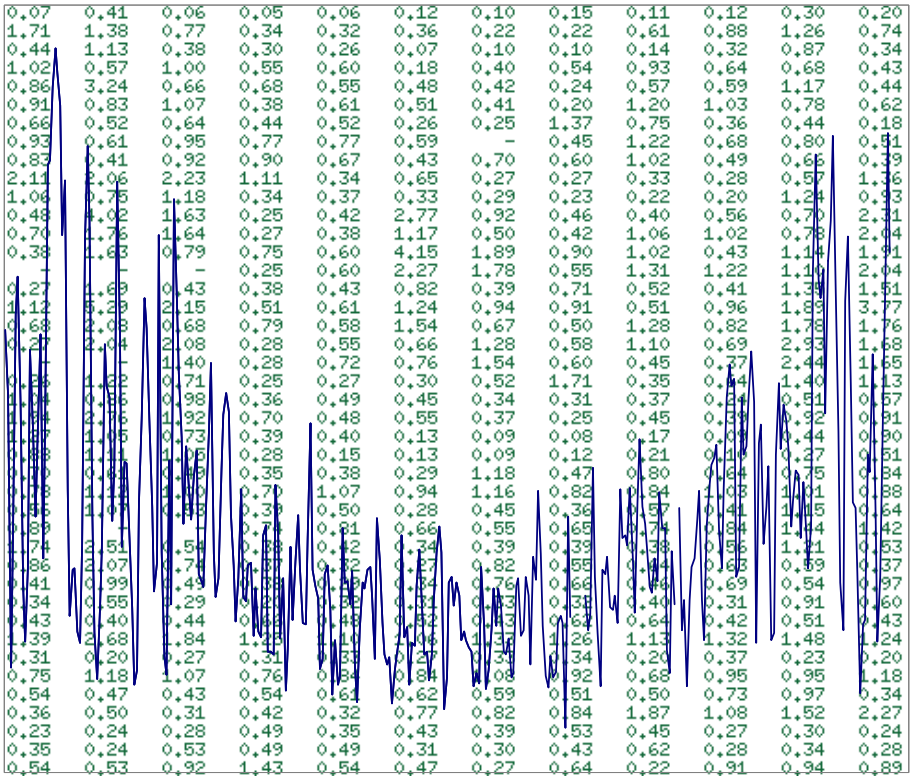
EMEP/CCC-Report 1/2004

EMEP Co-operative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe

Data Report 2002

Acidifying and eutrophying compounds

Anne-Gunn Hjellbrekke



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1. Introduction

Measurements of air quality in Europe have been carried out under the "Co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe" (EMEP) since 1 October 1977. From the start, priority was given to sulphur dioxide and sulphate in air, and pH and sulphate in precipitation, gradually increasing to all main components in precipitation and ozone and nitrogen compounds in air. A few sites also measure VOC, POPs and heavy metals.

The EMEP data from 2002 for acidifying and eutrophying components in air and precipitation are presented in this report, which aims to give a short overview of the measurement data available. A complete set of data, including raw data, annual statistics and monthly means, can be downloaded from the web at http://www.nilu.no/projects/ccc/ under 'Measurement data'.

The air and precipitation samples were analysed at the laboratories in the participating countries and the results have been forwarded to the Chemical Co-ordinating Centre (CCC) at the Norwegian Institute for Air Research (NILU).

2. The measurement network

The locations of the measurement sites for acidifying and eutrophying components are given in Table 1 and Figure 1. In addition to the network presented here, there are additional sites with other types of measurements.

In total, precipitation data from 89 stations and air data from 103 stations are presented in this report. The total number of measurement sites in this report is 109.

In some parts of Europe, the site density is low and highly unsatisfactory. There is a need for more sites especially in the Mediterranean region and in the eastern parts of Europe.

For detailed information on sites and their surroundings please see descriptions at http://www.nilu.no/projects/ccc/sitedescriptions/.

Table 1: List of EMEP monitoring stations in operation in 2002.

Country	Station codes	Station name	Location		Height above sea (m)
			Lat.	Long.	
Austria	AT0002R	Illmitz	47º46'E	16º46'E	117
	AT0004R	St. Koloman	47º39'N	13º12'E	851
	AT0005R	Vorhegg	46º40'N	12º58'E	1020
	AT0030R	Pillersdorf bei Retz	48º43'N	15º56'E	315
Belgium	BE0001R	Offagne	49º52'N	5º12'E	430
	BE0032R	Eupen	50º37'N	6º00'E	295
	BE0035R	Vezin	50º30'N	4º59'E	160
Belarus	BY0004R	Vysokoe	55º20'N	23º26'E	163
Czech Rep.	CZ0001R	Svratouch	49º44'N	16º02'E	737
	CZ0003R	Košetice	49º35'N	15º05'E	534
Denmark	DK0003R	Tange	56º21'N	9º36'E	13
	DK0005R	Keldsnor	54º44'N	10º44'E	9
	DK0008R	Anholt	56º43'N	11º31'E	40
	DK0022R	Sepstrup Sande	55º05'N	9º36'E	60
Estonia	EE0009R	Lahemaa	59º30'N	25º54'E	32
	EE0011R	Vilsandi	58º23'N	21º49'E	6
Finland	FI0004R	Ähtari	62º33'N	24º13'E	162
	FI0009R	Utö	59º47'N	21º23'E	7
	FI0017R	Virolahti II	60º31'N	27º41'E	4
	FI0022R	Oulanka	66º19'N	29º24'E	310
	FI0037R	Ähtari II	62º35'N	24º11'E	180
France	FR0003R	La Crouzille	45º50'N	1º16'E	497
	FR0005R	La Hague	49º37'N	1º50'W	133
	FR0008R	Donon	48º30'N	7º08'E	775
	FR0009R	Revin	49º54'N	4º38'E	390
	FR0010R	Morvan	47º16'N	4º05'E	620
	FR0012R	Iraty	43º02'N	1º05'W	1300
	FR0013R	Peyrusse Vielle	47º22'N	0º06'E	236
	FR0014R	Montandon	47º11'N	6º30'E	746
	FR0015R	La Tardière	49º37'N	1º50'E	
	FR0016R	Le Casset	45º39'N	6º31'E	
Germany	DE0001R	Westerland	54º55'N	8º18'E	12
	DE0002R	Langenbrügge	52º48'N	10º45'E	74
	DE0003R	Schauinsland	47º55'N	7º54'E	1205
	DE0004R	Deuselbach	49º46'N	7º03'E	480
	DE0005R	Brotjacklriegel	48º49'N	13º13'E	1016
	DE0007R	Neuglobsow	53º09'N	13º02'E	62
	DE0008R	Schmücke	50º39'N	10º46'E	937
	DE0009R	Zingst	54º26'N	12º44'E	1
Hungary	HU0002R	K-puszta	46º58'N	19º35'E	125
Iceland	IS0002R	Irafoss	64º05N	21º01'W	61
Ireland	IE0001R	Valentina Observatory	51º56'N	10º14'W	9
	IE0002R	Turlough Hill	53º02'N	6º24'W	420
	IE0003R	The Burren	53º00'N	7º27'W	90
Italy	IT0001R	Montelibretti	42º06'N	12º38'E	48
	IT0004R	Ispra	45º48'N	8º38'E	209
Latvia	LV0010R	Rucava	56º13'N	21º13'E	18
	LV0016R	Zoseni	57º08'N	25º55'E	183
Lithuania	LT0015R	Preila	55º21'N	21º04'E	5
Netherlands	NL0009R	Kollumerwaard	53º20'N	6º17'E	0
	NL0010R	Vreedepeel	51º32'N	5º51'E	28
Norway	NO0001R	Birkenes	58º23'N	8º15'E	190
	NO0008R	Skreådalen	58º49'N	6º43'E	475
	NO0015R	Tustervatn	65º50'N	13º55'E	439
	NO0039R	Kårvatn	62º47'N	8º53'E	210
	NO0041R	Osen	61º15'N	11º47'E	440
	NO0042G	Spitsbergen, Zeppelinfjell	78º54'N	11º53'E	474
	NO0055R	Karasjok	69º28'N	25º13'E	333
	NO0099R	Lista	58º06'N	6º34'E	13

Table 1 cont.:

Country	Station codes	Station name	Location		Height above sea (m)
			Lat.	Long.	
Poland	PL0002R	Jarczew	51°49'N	21°59'E	180
	PL0003R	Sniezka	50°44'N	15°44'E	1604
	PL0004R	Leba	54°45'N	17°32'E	2
	PL0005R	Diabla Gora	54°09'N	22°04'E	157
Portugal	PT0001R	Braganca	41°49'N	6°46'W	691
	PT0003R	Viana do Castelo	41°42'N	8°48'W	16
	PT0004R	Monte Velho	38°05'N	8°48'W	43
Russian Federation	RU0001R	Janiskoski	68°56'N	28°51'E	118
	RU0013R	Pinega	64°42'N	43°24'E	28
	RU0016R	Shepeljovo	59°58'N	29°07'E	4
	RU0018R	Danki	54°54'N	37°48'E	150
Serbia and Montenegro	CS0005R	Kamenicki vis	43°24'N	21°57'E	813
	CS0008R	Zabljak	43°09'N	19°08'E	1450
Slovenia	SI0008R	Iskrba	45°34'N	14°52'E	520
Slovakia	SK0002R	Chopok	48°56'N	19°35'E	2008
	SK0004R	Stará Lesná	49°09'N	20°17'E	808
	SK0005R	Liesek	49°22'N	19°41'E	892
	SK0006R	Starina	49°03'N	22°16'E	345
	SK0007R	Topolniky	47°57'N	17°51'E	113
Spain	ES0007R	Viznar	37°14'N	3°32'W	1265
	ES0008R	Niembro	43°27'N	4°51'W	134
	ES0009R	Campisabolos	41°17'N	3°9'W	1360
	ES0010R	Cabo de Creus	42°19'N	3°19'E	23
	ES0011R	Barcarrola	38°29'N	6°55'W	393
	ES0012R	Zarra	39°5'N	1°6'W	885
	ES0013R	Penausende	41°17'N	5°52'W	985
	ES0014R	Els Torms	41°24'N	0°43'E	470
	ES0015R	Risco Llamo	39°31'N	4°21'W	1241
	ES0016R	O Saviñao	43°13'N	7°41'W	506
Sweden	SE0005R	Bredkälen	63°51'N	15°20'E	404
	SE0008R	Hoburgen	56°55'N	18°09'E	58
	SE0011R	Vavihill	56°01'N	13°09'E	172
	SE0014R	Råö	57°24'N	11°55'E	5
Switzerland	CH0001G	Jungfraujoch	46°33'N	7°59'E	3573
	CH0002R	Payerne	46°48'N	6°57'E	510
	CH0003R	Tänikon	47°29'N	8°54'E	540
	CH0004R	Chaumont	47°03'N	6°59'E	1130
	CH0005R	Rigi	47°04'N	8°28'E	1030
Turkey	TR0001R	Cubuk II	40°30'N	33°00'E	1169
United Kingdom	GB0002R	Eskdalemuir	55°19'N	3°12'W	243
	GB0006R	Lough Navar	54°26'N	7°54'W	126
	GB0013R	Yarner Wood	50°36'N	3°43'W	119
	GB0014R	High Muffles	54°20'N	0°48'W	267
	GB0015R	Strath Vaich Dam	57°44'N	4°46'W	270
	GB0036R	Harwell	51°34'N	1°18'W	137
	GB0037R	Ladybower Res.	53°23'N	1°45'W	420
	GB0038R	Lullington Heath	50°47'N	0°10'W	120
	GB0043R	Narberth	51°14'N	4°42'W	160
	GB0045R	Wicken Fen	52°18'N	0°18'W	5

3. Site codes

The site codes used in this report are the codes used for data submission and storage in the EMEP database. The codes consist of the two-letter ISO code for the countries, a four-digit number and a letter indicating the type of station, regional (R) or global (G). The station numbers have been retained from previous codes used.

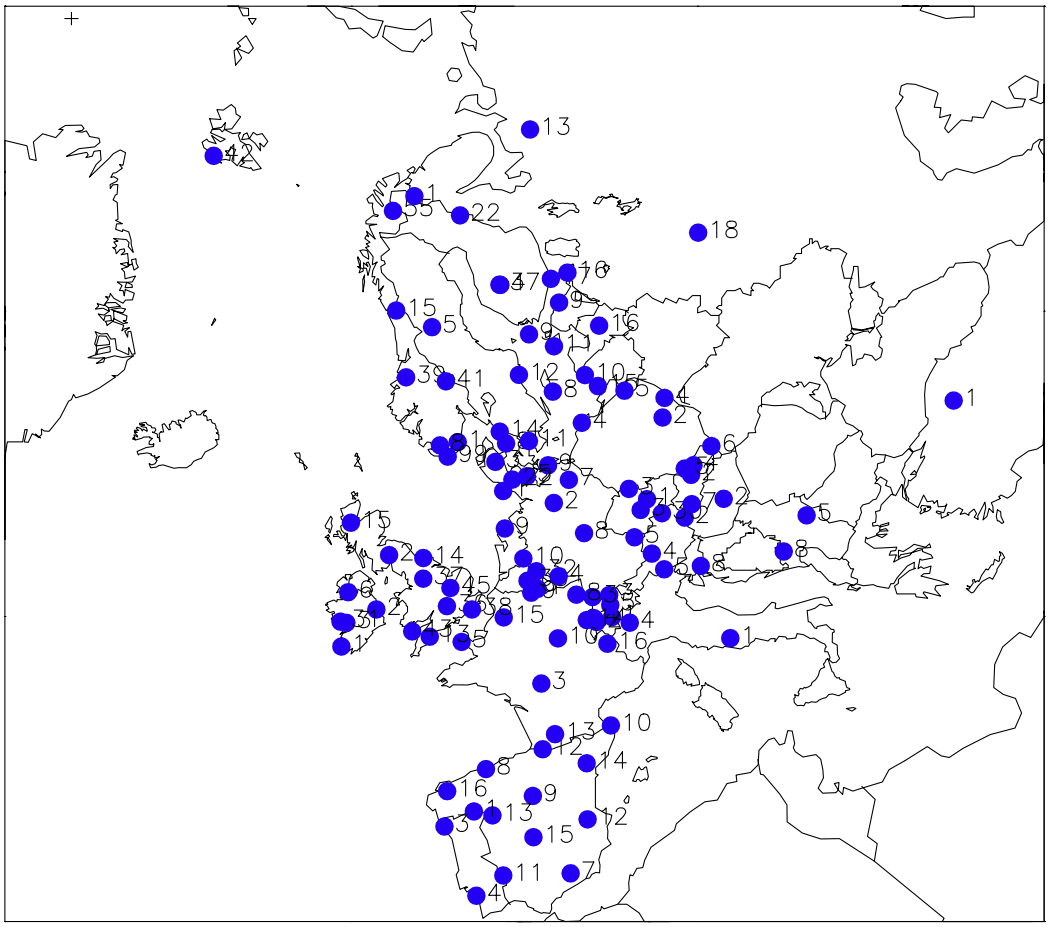

Figure 1: Location of the EMEP monitoring stations in operation in 2002. Sites with ozone/VOC measurements only are not included.

4. The measurement programme during 2002

EMEP's measurement programme during 2002 is presented in Table 2. A few sites have a less extensive measurement programme, as can be seen from the data tables in this report. Most sites measure air as well as precipitation components. However, some sites perform either the one or the other type of measurements.

Table 2: EMEP's measurement programme 2002.

	Components	Measurement period	Measurement frequency
Gas	SO_2, NO_2	24 hours	Daily
	O_3	hourly means stored	continuously
	Light hydrocarbons C_2-C_7	10-15 mins	twice weekly
	Ketones and aldehydes (VOC)	8 hours	twice weekly
	Hg	24 hours	weekly
Particles	SO_4^{2-}, NH_4^+, NO_3^-, Ca^{2+}, Mg^{2+}, Na^+, K^+, Cl^-	24 hours	daily
	Cd, Pb (first priority), Cu, Zn, As, Cr, Ni (second priority)	weekly	weekly
	PM mass	24 hours	daily
Gas + particles	$HNO_3(g)+NO_3^-(p)$, $NH_3(g)+NH_4^-(p)$	24 hours	daily
	POPs (PAH, PCB, HCB, chlordane, lindane, α-HCH, DDT/DDE)	daily/weekly	once weekly
Precipitation	Amount, SO_4^{2-}, NO_3^-, Cl^-, pH, NH_4^+, Na^+, Mg^{2+}, Ca^{2+}, K^+, conductivity	24 hours/weekly	daily/weekly
	Hg, Cd, Pb (first priority), Cu, Zn, As, Cr, Ni (second priority)	weekly	weekly
	POPs (PAH, PCB, HCB, chlordane, lindane, α-HCH, DDT/DDE)	weekly	weekly

Measurements of VOC, heavy metals and POPs are made at a small number of sites only.

An evaluation of the VOC measurement programme within EMEP has been published earlier (Solberg et al., 1995). The VOC data from 2002 have been reported separately by Solberg et al. (2004), while ozone data from 2002 have been reported by Hjellbrekke and Solberg (2004). Heavy metals and POPs were reported by Aas and Breivik (2004).

A list of data reports from EMEP/CCC can be found in Annex 5. The most resent data reports are also available on the web in pdf, word and text format at http://www.nilu.no/projects/ccc/reports.html.

5. Sampling and analytical methods

The recommended procedures for sampling and analysis of precipitation and air are described in the EMEP Manual for sampling and chemical analysis. The manual has been updated and sent out in 1996 (EMEP, 1996). A version is also available on the web at http://www.nilu.no/projects/ccc/manual/. The methods used by the participating countries are given in Annex 4.

Generally, concentrations of gaseous nitric acid and ammonia, and of nitrate and ammonium in aerosol particles are determined by filter pack sampling. However, sampling artefacts due to the volatile nature of ammonium nitrate, and the possible interaction with strong acids, e.g. sulphuric acid, make separation of gases and particles by simple aerosol filters unreliable. Therefore only the sums of nitric acid and nitrate, and of ammonium and ammonia are unbiased.

6. Laboratory intercomparison

During 2002 the 20th laboratory intercomparison of analytical methods was carried out. As usual most of the laboratories report acceptable data, but there are still some outliers. The intercomparison results are presented in Uggerud et al. (2003).

7. Calculation of excess sulphate in precipitation

The sulphate in precipitation is stored in the database as reported, i.e. total sulphate, and as corrected, non-marine sulphate, i.e. total sulphate minus sulphate originating from sea-salt particles.

When the sulphate concentrations originating from sea-salt are larger than the total sulphate, and the corrected sulphate concentrations consequently become less than zero, negative concentrations have been stored in the database and have been used to calculate averages in the report in order to avoid bias in the aggregates. Negative concentrations are mainly caused by random errors in the data and occur when non sea-salt sulphate concentrations are low compared to total sulphate.

CCC has since 1994 used a routine worked out by the Canadian Air and Precipitation Monitoring Network (CAPMoN) for calculation of the marine contribution to sulphate in precipitation. The routine has been adopted by the WMO GAW. A series of EMEP's sites will also report data to WMO, and common routines will necessarily fill the data bases with identical data. This is consequently a step in a harmonisation process between EMEP and WMO GAW.

Excess sulphate data as calculated with the old routine are available from the CCC as a continuation of the data series upon request.

8. Annual summaries of the data

8.1 Maps over Europe

Geographical distributions based on annual means of SO_2, NO_2 and SO_4^{--} in air and pH, NH_4^+, NO_3^-, Ca and excess SO_4^{--} in precipitation of are shown in Annex 1.

8.2 Annual summaries in tables

Annual statistics of the precipitation data are given in Annex 2 and of the air data in Annex 3. The precipitation component summaries contain:

- the precipitation weighted arithmetic mean value,
- the minimum and maximum daily concentrations,
- the wet deposition,
- percent of total precipitation amount analysed for a specific component (completeness for precipitation data),
- the number of data below the detection limit,

The wet depositions have been obtained by multiplying the weighted mean concentration by the total amount of precipitation in the period. The concentrations for days with missing precipitation data have consequently been assumed to be equal to the weighted average of the period.

Concentrations less than zero may exist in the database for sulphate in precipitation corrected for sea-salt. This occurs whenever the sea-salt contribution is larger than the total sulphate concentration, and it is caused by random errors in the results. The negative values have been included in the estimation of the weighted arithmetic mean values.

For air components the statistical summaries in Annex 3 contain:

- arithmetic mean and standard deviation
- geometric mean and standard deviation
- minimum and maximum daily concentrations
- 5-percentile, median and 95-percentile
- data capture
- the number of data below the detection limit and total number of samples

A description of the calculation procedures are given in Annex 6.

In addition to the statistical summaries in Annex 2 and Annex 3 annual averages are summarized in Tables 3-6. The units used for the results in this report are given in Table 7 and Table 8.

Table 3: Annual averages of main components in precipitation 2002.

Code	mm	mm off	pH	SO4	XSO4	NH4	NO3	Na	Mg	Cl	Ca	K	cond
AT0002R	481.0	-	4.99	0.74	0.73	0.64	0.44	0.08	0.057	0.13	0.60	0.04	17
AT0004R	1451.9	-	5.24	0.23	0.22	0.35	0.33	0.12	0.026	0.12	0.28	0.02	10
AT0005R	1325.8	-	5.37	0.37	0.34	0.28	0.23	0.13	0.066	0.22	1.23	0.04	13
BY0004R	468.8	-	6.13	1.69	1.54	0.95	0.95	1.37	0.533	2.40	2.83	1.82	11
CH0002R	989.6	-	5.13	0.27	0.26	0.38	0.27	0.08	0.019	0.16	0.20	0.04	10
CH0004R	1368.5	-	5.02	0.21	0.21	0.22	0.21	0.07	0.014	0.13	0.11	0.02	8
CH0005R	1798.3	-	4.96	0.27	0.26	0.41	0.30	0.04	0.012	0.07	0.15	0.03	11
CS0005R	479.1	-	5.06	1.79	1.74	0.94	0.66	0.51	0.144	0.87	1.88	0.59	24
CS0008R	419.0	-	5.69	0.99	0.94	0.42	0.34	0.49	0.125	1.53	1.71	0.61	23
CZ0001R	894.9	-	4.78	0.66	0.65	0.51	0.43	0.11	0.046	0.20	0.35	0.08	17
CZ0003R	776.9	-	5.04	0.52	0.51	0.46	0.38	0.09	0.041	0.18	0.56	0.09	16
DE0001R	717.6	-	4.71	0.90	0.46	0.53	0.51	5.21	0.656	9.18	0.38	0.21	43
DE0002R	898.4	-	4.85	0.51	0.47	0.62	0.48	0.41	0.084	0.74	0.22	0.08	18
DE0003R	2009.4	-	4.92	0.28	0.27	0.29	0.26	0.10	0.024	0.16	0.13	0.02	8
DE0004R	860.8	-	4.89	0.41	0.38	0.42	0.40	0.26	0.050	0.46	0.20	0.06	14
DE0005R	1279.9	-	5.18	0.35	0.34	0.44	0.35	0.10	0.032	0.15	0.32	0.04	9
DE0007R	632.3	-	4.90	0.52	0.49	0.57	0.43	0.32	0.060	0.54	0.35	0.07	14
DE0008R	1281.4	-	4.83	0.36	0.34	0.40	0.36	0.20	0.031	0.28	0.15	0.05	11
DE0009R	674.4	-	4.89	0.59	0.51	0.53	0.46	0.88	0.134	1.53	0.46	0.06	16
DK0005R	674.0	-	5.00	0.57	0.45	0.90	0.45	1.47	0.184	2.73	0.34	0.35	26
DK0008R	711.7	-	4.57	0.58	0.40	0.36	0.47	2.16	0.240	3.81	0.15	0.11	30
DK0022R	728.6	-	4.93	0.46	0.36	0.49	0.40	1.26	0.124	2.26	0.12	0.08	19
EE0009R	559.4	-	4.79	0.41	0.39	0.14	0.27	0.22	0.038	0.58	0.26	0.06	12
EE0011R	432.6	-	4.76	0.63	0.58	0.28	0.33	0.40	0.075	0.83	0.41	0.24	14
ES0007R	681.8	-	6.18	0.56	0.50	0.17	0.28	0.45	0.159	0.91	0.83	0.13	13
ES0008R	622.6	-	4.85	1.32	0.95	0.48	0.63	4.55	0.527	6.93	0.89	0.27	47
ES0009R	477.4	-	5.79	0.50	0.45	0.23	0.40	0.50	0.088	0.91	0.75	0.10	14
ES0011R	532.6	-	6.61	0.64	0.53	0.10	0.32	1.24	0.956	2.09	2.15	0.28	28
ES0012R	329.4	-	4.78	0.87	0.79	0.32	0.67	0.88	0.189	1.31	2.30	0.18	23
ES0013R	357.4	-	6.07	0.50	0.45	0.21	0.31	0.48	0.089	0.90	0.82	0.18	13
ES0014R	253.0	-	6.56	0.97	0.89	0.51	0.64	0.58	0.367	1.43	4.04	0.24	33
ES0015R	512.6	-	6.07	0.73	0.65	0.53	0.46	0.90	0.151	1.57	0.78	0.16	19
ES0016R	823.6	-	6.16	0.50	0.42	0.34	0.25	1.06	0.137	1.77	0.53	0.16	16
FI0004R	514.0	570.1	4.83	0.28	0.28	0.26	0.23	0.09	0.021	0.16	0.10	0.04	11
FI0009R	257.1	438.5	4.68	0.60	0.53	0.55	0.48	0.84	0.122	1.42	0.27	0.12	24
FI0017R	435.6	523.9	4.67	0.45	0.44	0.31	0.32	0.17	0.036	0.33	0.17	0.09	16
FI0022R	395.9	476.0	4.76	0.21	0.20	0.10	0.14	0.07	0.012	0.13	0.05	0.02	10
FR0003R	891.6	-	5.29	0.31	0.26	0.27	0.20	0.61	0.095	1.05	0.42	0.08	12
FR0005R	981.0	-	5.03	0.70	0.25	0.19	0.21	5.40	0.695	9.56	0.38	0.22	44
FR0008R	1749.7	-	4.88	0.30	0.28	0.30	0.28	0.18	0.031	0.32	0.17	0.03	11
FR0009R	1540.0	-	4.94	0.38	0.33	0.37	0.31	0.57	0.079	0.94	0.20	0.06	14
FR0010R	1061.6	-	5.02	0.34	0.30	0.33	0.25	0.45	0.062	0.73	0.21	0.07	12
FR0012R	1514.8	-	5.01	0.42	0.36	0.31	0.24	0.65	0.104	1.12	0.54	0.06	15
FR0013R	803.7	-	4.89	0.49	0.43	0.32	0.29	0.78	0.113	1.34	0.44	0.06	17
FR0014R	1298.6	-	4.92	0.32	0.31	0.37	0.31	0.13	0.024	0.23	0.21	0.03	11
FR0015R	1033.0	-	5.09	0.47	0.32	0.36	0.22	1.72	0.222	3.00	0.23	0.10	20
FR0016R	844.2	-	5.28	0.22	0.21	0.15	0.17	0.06	0.037	0.14	0.57	0.08	7
GB0002R	1890.4	-	4.90	0.40	0.29	0.77	0.29	1.35	0.149	2.40	0.09	0.23	23
GB0006R	1360.2	-	5.12	0.41	0.12	0.16	0.12	3.48	0.395	6.11	0.20	0.14	28
GB0013R	1328.3	-	4.77	0.67	0.29	0.27	0.27	4.58	0.534	7.98	0.26	0.20	40
GB0014R	878.8	-	4.44	0.66	0.55	0.47	0.43	1.30	0.163	2.40	0.23	0.09	27
GB0015R	1167.2	-	4.88	0.30	0.10	0.07	0.11	2.40	0.267	4.16	0.11	0.09	22
HU0002R	318.3	425.5	5.71	1.43	1.36	0.77	0.57	0.95	0.333	0.86	1.64	0.21	29
IE0001R	1783.3	1919.0	5.38	0.89	0.12	0.09	0.07	9.25	1.191	16.37	0.44	0.49	68
IE0002R	1008.4	-	4.96	0.37	0.23	0.26	0.18	1.70	0.183	2.58	0.09	0.05	19
IE0003R	675.3	-	5.29	0.97	0.19	0.23	0.11	9.41	1.090	15.76	0.50	0.42	69
IT0001R	657.0	-	4.98	1.16	1.04	0.34	0.48	1.85	0.229	2.54	2.51	0.95	34
IT0004R	1920.9	-	4.81	0.59	0.57	0.64	0.50	0.21	0.069	0.40	1.07	0.07	21
LT0015R	452.0	-	4.71	0.81	0.65	0.48	0.57	1.94	-	3.21	0.84	0.26	29
LV0010R	695.0	-	4.72	0.52	0.46	0.47	0.50	0.56	0.107	1.16	0.36	0.10	19
LV0016R	617.1	-	5.31	0.45	0.41	0.45	0.39	0.42	0.211	0.73	0.98	0.27	18

Table 3 cont.:

Code	mm	mm off	pH	SO4	XSO4	NH4	NO3	Na	Mg	Cl	Ca	K	cond
NL0009R	829.2	-	5.40	0.57	0.43	0.67	0.38	1.55	0.203	2.86	0.31	0.14	22
NO0001R	1574.2	-	4.71	0.43	0.35	0.32	0.33	0.90	0.119	1.52	0.10	0.09	19
NO0008R	2007.5	-	5.17	0.36	0.22	0.35	0.23	1.83	0.202	3.19	0.19	0.26	20
NO0015R	1162.4	-	5.38	0.20	0.09	0.14	0.07	1.42	0.173	2.58	0.11	0.11	13
NO0039R	1297.9	-	5.26	0.18	0.10	0.10	0.07	0.89	0.110	1.61	0.08	0.09	11
NO0041R	737.5	-	4.91	0.26	0.25	0.25	0.19	0.13	0.030	0.22	0.11	0.12	10
NO0055R	297.7	-	5.11	0.26	0.21	0.19	0.13	0.57	0.064	0.97	0.12	0.24	9
NO0099R	1133.0	-	4.68	2.01	0.47	0.55	0.71	18.88	2.209	32.37	1.00	0.80	127
PL0002R	560.4	-	4.74	0.66	0.64	0.66	0.44	0.18	0.050	0.46	0.27	0.11	19
PL0003R	1243.6	-	4.57	0.76	0.71	0.42	0.87	0.52	0.144	0.63	0.64	0.22	25
PL0004R	746.0	-	4.68	0.52	0.47	0.48	0.44	0.64	0.098	1.14	0.22	0.09	21
PL0005R	-	654.4	4.78	0.58	0.56	0.53	0.44	0.22	0.066	0.53	0.35	0.11	16
PT0001R	-	1014.9	5.97	0.51	0.46	0.14	0.15	0.63	0.096	0.84	1.63	0.05	14
PT0003R	-	1729.6	5.33	0.60	0.33	0.10	0.17	3.53	0.404	5.36	0.41	0.10	28
PT0004R	-	694.5	5.13	0.76	0.42	0.10	0.15	4.36	0.489	6.55	0.41	0.15	34
RU0001R	384.9	-	5.00	0.39	0.28	0.27	0.08	1.52	0.129	2.17	0.38	0.80	21
RU0013R	348.1	-	5.42	0.40	0.33	0.21	0.08	0.87	0.218	1.12	1.08	0.70	16
RU0016R	472.4	-	4.91	0.82	0.66	0.43	0.40	1.99	0.293	3.23	0.94	0.56	31
RU0018R	553.1	-	4.98	0.48	0.45	0.40	0.28	0.33	0.084	0.32	0.70	0.26	15
SE0005R	347.6	-	4.89	0.20	0.19	0.13	0.16	0.07	0.016	0.13	0.06	0.04	9
SE0011R	964.0	-	4.75	0.45	0.41	0.49	0.47	0.48	0.072	0.83	0.12	0.09	19
SE0014R	628.8	-	4.59	0.60	0.43	0.49	0.51	2.05	0.247	3.55	0.18	0.14	32
SK0002R	1165.2	-	4.64	0.99	0.96	0.56	0.40	0.35	0.065	0.34	0.51	0.25	20
SK0004R	886.8	-	4.80	0.76	0.74	0.41	0.30	0.25	0.048	0.28	0.38	0.26	16
SK0005R	821.3	-	4.71	0.77	0.74	0.40	0.37	0.42	0.069	0.50	0.59	0.29	18
SK0006R	801.8	-	4.69	0.86	0.83	0.43	0.43	0.46	0.080	0.42	0.75	0.38	20
SK0007R	583.4	-	4.83	0.95	0.93	0.44	0.39	0.48	0.079	0.49	0.90	0.22	19
TR0001R	332.8	-	5.28	1.02	0.97	0.48	0.34	0.55	0.158	0.63	1.75	0.25	22

Table 4: Annual averages of main components in air 2002.

Code	SO2	NO2	SO4	XSO4	SNO3	NO3	HNO3	SNH4	NH4	NH3
AT0002R	1.50	2.60	1.08	-	0.82	-	-	2.95	-	-
AT0004R	-	1.79	-	-	-	-	-	-	-	-
AT0005R	-	0.96	-	-	-	-	-	-	-	-
AT0030R	1.63	-	-	-	-	-	-	-	-	-
BE0001R	-	4.52	-	-	-	-	-	-	-	-
BE0032R	-	4.86	-	-	-	-	-	-	-	-
BE0035R	-	6.20	-	-	-	-	-	-	-	-
CH0001G	0.10	0.10	0.12	-	-	-	-	-	-	-
CH0002R	0.48	4.36	0.73	-	-	-	-	-	-	-
CH0003R	-	4.29	-	-	-	-	-	-	-	-
CH0004R	0.51	2.36	-	-	-	-	-	-	-	-
CH0005R	0.34	2.53	0.58	-	0.78	-	-	1.76	-	-
CS0005R	4.94	3.31	-	-	-	-	-	-	-	-
CS0008R	2.14	4.28	-	-	-	-	-	-	-	-
CZ0001R	1.55	2.57	1.16	-	0.74	-	-	1.33	-	-
CZ0003R	1.15	3.11	1.32	-	0.87	-	-	1.67	-	-
DE0001R	1.33	2.26	0.96	-	1.13	-	-	2.18	-	-
DE0002R	0.80	2.24	-	-	-	-	-	-	-	-
DE0003R	0.75	0.91	0.63	-	0.58	-	-	1.07	-	-
DE0004R	2.17	2.46	1.01	-	1.00	-	-	1.85	-	-
DE0005R	0.99	1.55	-	-	-	-	-	-	-	-
DE0007R	1.67	2.03	1.10	-	0.85	-	-	1.75	-	-
DE0008R	0.73	1.87	-	-	-	-	-	-	-	-
DE0009R	1.64	2.21	1.01	-	1.05	-	-	1.91	-	-
DK0003R	0.28	-	0.76	0.68	0.80	-	-	2.72	-	-
DK0005R	0.68	-	0.94	0.81	1.14	-	-	2.54	-	-
DK0008R	0.48	-	0.75	-	0.73	-	-	1.22	-	-
EE0009R	0.73	0.48	0.18	-	-	-	-	-	-	-
EE0011R	0.39	0.70	-	-	-	-	-	-	-	-
ES0007R	0.43	2.37	1.08	-	0.47	-	-	0.36	-	-
ES0008R	2.56	1.42	1.39	-	0.34	-	-	0.75	-	-
ES0009R	0.39	0.92	0.67	-	0.18	-	-	0.12	-	-
ES0010R	0.38	1.28	1.28	-	0.13	-	-	1.32	-	-
ES0011R	0.69	0.81	0.85	-	0.17	-	-	0.37	-	-
ES0012R	0.63	1.20	0.98	-	0.43	-	-	1.69	-	-
ES0013R	0.68	0.96	0.72	-	0.12	-	-	0.92	-	-
ES0014R	0.69	1.64	1.08	-	0.55	-	-	0.59	-	-
ES0015R	0.61	0.74	0.76	-	0.38	-	-	0.70	-	-
ES0016R	1.46	1.21	1.22	-	0.30	-	-	0.92	-	-
FI0009R	0.52	1.17	0.66	-	0.45	-	-	0.55	-	-
FI0017R	0.73	1.65	0.63	-	0.30	-	-	0.71	-	-
FI0022R	0.40	0.29	0.36	-	0.06	-	-	0.17	-	-
FI0037R	0.34	0.64	0.46	-	0.18	-	-	0.37	-	-
FR0003R	0.59	-	0.61	-	-	-	-	-	-	-
FR0005R	0.55	-	0.61	-	-	-	-	-	-	-
FR0008R	0.48	-	0.55	-	-	-	-	-	-	-
FR0009R	0.67	-	0.77	-	-	-	-	-	-	-
FR0010R	0.37	-	0.45	-	-	-	-	-	-	-
FR0012R	0.43	-	0.76	-	-	-	-	-	-	-
FR0013R	0.38	-	0.46	-	-	-	-	-	-	-
FR0014R	0.25	-	0.46	-	-	-	-	-	-	-
FR0015R	0.29	-	0.69	-	-	-	-	-	-	-
FR0016R	0.23	-	0.36	-	-	-	-	-	-	-

Table 4 cont.:

Code	SO2	NO2	SO4	XSO4	SNO3	NO3	HNO3	SNH4	NH4	NH3
GB0002R	0.24	-	-	-	-	-	-	-	-	-
GB0006R	0.11	-	-	-	-	-	-	-	-	-
GB0013R	0.30	-	-	-	-	-	-	-	-	-
GB0014R	1.54	-	-	-	-	-	-	-	-	-
GB0015R	0.10	-	-	-	-	-	-	-	-	-
GB0036R	-	4.47	-	-	-	-	-	-	-	-
GB0037R	-	3.94	-	-	-	-	-	-	-	-
GB0038R	-	3.30	-	-	-	-	-	-	-	-
GB0043R	-	2.12	-	-	-	-	-	-	-	-
GB0045R	-	3.53	-	-	-	-	-	-	-	-
HU0002R	2.46	1.67	1.45	-	-	0.62	0.18	-	1.50	1.50
IE0001R	0.29	0.62	0.55	-	-	-	-	-	-	-
IE0002R	0.04	-	0.34	-	-	-	-	-	-	-
IE0003R	-	-	0.26	-	-	-	-	-	-	-
IT0001R	0.61	5.61	1.02	-	-	0.50	0.14	-	1.83	1.82
IT0004R	0.88	10.10	0.96	-	-	0.65	-	-	2.23	-
LT0015R	1.23	1.29	1.24	-	0.78	-	-	1.69	-	-
LV0010R	0.61	0.68	0.83	-	0.50	0.12	-	1.54	0.99	-
LV0016R	0.57	0.69	0.45	-	0.29	0.08	-	1.44	0.77	-
NL0009R	0.66	3.74	0.79	-	-	0.70	-	-	1.26	-
NL0010R	1.05	6.33	0.95	-	-	0.93	-	-	1.60	11.86
NO0001R	0.15	0.45	0.50	0.47	0.27	0.19	0.07	0.62	0.40	0.22
NO0008R	0.11	0.39	0.39	0.36	0.26	0.21	0.05	1.21	0.40	0.81
NO0015R	0.09	0.18	0.21	0.18	0.10	0.07	0.04	0.83	0.11	0.71
NO0039R	0.07	0.26	0.20	0.19	0.09	0.06	0.03	0.79	0.13	0.44
NO0041R	0.07	0.38	0.27	0.27	0.12	0.08	0.05	0.52	0.19	0.33
NO0042G	0.16	-	0.14	0.11	0.05	0.02	0.03	0.23	0.02	0.21
NO0055R	0.30	0.18	0.23	0.21	0.07	0.04	0.02	0.11	0.11	-
PL0002R	2.48	3.21	1.41	-	0.91	0.70	-	2.85	1.71	-
PL0003R	1.08	1.09	0.73	-	0.29	0.23	-	0.82	0.59	-
PL0004R	1.31	1.60	1.42	-	0.67	0.56	-	1.79	1.26	-
PL0005R	0.81	0.77	0.88	-	0.58	-	-	1.77	-	-
RU0001R	0.87	-	0.36	-	-	0.04	-	-	0.23	-
RU0016R	0.72	-	0.39	-	-	0.17	-	-	0.48	-
RU0018R	0.35	-	0.55	-	-	0.25	-	-	0.57	-
SE0005R	0.05	0.14	0.22	-	0.06	-	-	0.19	-	-
SE0008R	0.52	1.11	0.70	-	-	-	-	-	-	-
SE0011R	0.37	1.39	0.70	-	0.61	-	-	1.26	-	-
SE0014R	0.41	1.38	0.82	-	0.70	-	-	0.99	-	-
SI0008R	0.67	-	0.82	-	0.22	-	-	0.90	-	-
SK0002R	0.69	0.80	0.47	-	-	0.20	0.09	-	-	-
SK0004R	0.81	1.48	0.95	-	-	0.30	0.07	-	-	-
SK0005R	1.32	1.66	1.25	-	-	0.49	0.11	-	-	-
SK0006R	1.26	1.34	1.10	-	-	0.28	0.26	-	-	-
SK0007R	2.53	2.82	1.64	-	-	1.16	0.13	-	-	-
TR0001R	2.62	1.37	0.81	-	0.28	0.14	0.14	0.77	0.53	0.27

Table 5: Annual averages of base cations and sodium and chloride in aerosols.

Code	Na	Ca	Mg	K	Cl
DK0003R	0.90	-	-	-	-
DK0005R	1.64	-	-	-	-
DK0008R	1.14	-	-	-	-
NL0009R	-	0.10	-	-	-
NO0001R	0.35	0.06	0.04	0.06	0.34
NO0008R	0.35	0.07	0.04	0.06	0.40
NO0015R	0.28	0.04	0.04	0.03	0.36
NO0039R	0.16	0.03	0.02	0.03	0.18
NO0041R	0.09	0.03	0.01	0.04	0.06
NO0042G	0.28	0.04	0.04	0.03	0.34
NO0055R	0.26	0.02	0.03	0.03	0.32

Table 6: Annual averages of particulate matter.

Code	PM_{10}	PM_{10}-$PM_{2.5}$	$PM_{2.5}$	PM_1	SPM
AT0002R	29.23	-	23.27	-	-
AT0004R	11.99	-	-	-	-
AT0005R	11.16	-	-	-	-
CH0001G	-	-	-	-	3.40
CH0002R	21.12	-	15.89	-	-
CH0003R	19.64	-	-	-	-
CH0004R	12.40	-	8.74	-	-
CH0005R	13.21	-	-	-	-
CZ0003R	20.74	-	-	-	-
DE0001R	20.17	-	-	-	-
DE0002R	19.49	-	14.85	-	-
DE0003R	9.90	-	7.64	-	-
DE0004R	16.01	-	12.30	-	-
DE0005R	12.30	-	-	-	-
DE0007R	16.38	-	-	-	-
DE0008R	11.96	-	-	-	-
DE0009R	18.84	-	-	-	-
ES0007R	21.40	-	10.31	-	38.65
ES0008R	18.54	-	10.13	-	27.94
ES0009R	10.80	-	6.98	-	17.23
ES0010R	18.90	-	12.90	-	35.47
ES0011R	15.95	-	12.45	-	24.91
ES0012R	14.64	-	8.15	-	21.36
ES0013R	12.28	-	8.02	-	17.73
ES0014R	15.38	-	10.64	-	23.38
ES0015R	12.27	-	6.70	-	22.93
ES0016R	13.85	-	9.43	-	20.02
FI0017R	9.96	-	-	-	-
IE0031R	13.18	-	-	-	-
IT0001R	33.22	-	-	-	-
IT0004R	35.45	-	29.39	-	-
NL0009R	22.89	-	-	-	-
NO0001R	7.43	2.27	5.75	-	-
NO0099R	-	9.66	6.83	-	-
PT0001R	14.27	-	-	-	-

Table 6 cont.

Code	PM_{10}	PM_{10}-$PM_{2.5}$	$PM_{2.5}$	PM_1	SPM
SE0005R	-	-	-	-	-
SE0008R	-	-	-	-	-
SE0011R	-	-	-	-	-
SE0012R	8.88	-	-	-	-
SE0014R	-	-	-	-	-
SK0002R	-	-	-	-	-
SK0004R	18.95	-	-	-	-
SK0005R	-	-	-	-	34.85
SK0006R	-	-	-	-	14.76
SK0007R	-	-	-	-	23.27

Table 7: Units used for precipitation components.

Precipitation components	Units for W. mean, Min., Max.	Units for depositions
Amount	mm	mm
SO_4^{--}	mg S/l	mg S/m^2
NO_3^-	mg N/l	mg N/m^2
Cl^-	mg Cl/l	mg Cl/m^2
NH_4^+	mg N/l	mg N/m^2
H^+	µe H^+/l	µe H^+/m^2
pH	pH-units	µe H^+/m^2
Na^+	mg Na/l	mg Na/m^2
Mg^{2+}	mg Mg/l	mg Mg/m^2
K^+	mg K/l	mg K/m^2
Ca^{2+}	mg Ca/l	mg Ca/m^2

Table 8: Units used for air components.

Air components	Units for arithmetic and geometric mean values, arithmetic standard deviations, Min., Max, percentiles.
SO_2	µg S/m^3
NO_2	µg N/m^3
HNO_3	µg N/m^3
NH_3	µg N/m^3
SO_4^{2-}	µg S/m^3
NO_3^-	µg N/m^3
NH_4^+	µg N/m^3
H^+	Ne H^+/m^3
SPM, PM	µg/m^3
HNO_3 + NO_3^-	µg N/m^3
NH_3 + NH_4^+	µg N/m^3
Ca^{++}	µg/m^3
Cl^-	µg/m^3
Mg^{++}	µg/m^3
K^+	µg/m^3
Na^+	µg/m^3

9. Update

The data compiled in this report represent the best data available at present. If any further errors are detected, the data will be corrected in the database. It is important that users make certain that they have access to the most recent version of the database. For the data presented here the latest alteration was 2 June, 2004.

Scientific use of the EMEP data should be based on fresh copies of the data. Copies can be requested from the CCC (e-mail: anne-gunn.hjellbrekke@nilu.no) or downloaded from the internet at http://www.nilu.no/projects/ccc/. Information about the EMEP network and measurement data can also be found at http://www.emep.int.

10. References

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12. List of participating institutions

Austria	Umweltbundesamt
Belgium	CELINE - IRCEL
Commission of the European Communities	Joint Research Center. Ispra Establishment
Croatia	Meteorological and Hydrological Service of Croatia
Czech Republic	Czech Hydrometeorological Institute
Denmark	National Environmental Research Institute
Finland	Finnish Meteorological Institute
France	l' Ecole des Mines de Douai Laboratories Wolff
Germany	Umweltbundesamt
Greece	Ministry of Environmental Physical Planning and Public Works
Hungary	Institute for Atmospheric Physics, Dep. for Air Chemistry
Iceland	The Icelandic Meteorological Office
Ireland	Meteorological Service H.Q. Electricity Supply Board (ESB)
Italy	C.N.R. Istituto Inquinamento Atmosferico
Latvia	Latvian Hydrometeorological Agency
Lithuania	Institute of Physics
Netherlands	National Institute for Public Health and Environmental Protection (RIVM)
Norway	Norwegian Institute for Air Research (NILU)
Poland	Institute of Meteorology and Water Management Institute of Environmental Protection
Portugal	Ministério do ambiente e recursos naturais
Russian Federation	Institute of Global Climate and Ecology
Serbia and Montenegro	Federal Hydrometeorological Institute
Slovakia	Slovak Hydrometeorological Institute
Slovenia	Hydrometeorological Institute of Slovenia
Spain	Dirección General de Calidad y Evaluacíon Ambiental
Sweden	Swedish Environmental Research Institute (IVL)
Switzerland	Swiss Federal Laboratory of Testing Materials and Research (EMPA)
Turkey	Refik Saydam Centre of Hygiene
United Kingdom	AEA Technology

Annex 1

Maps over Europe

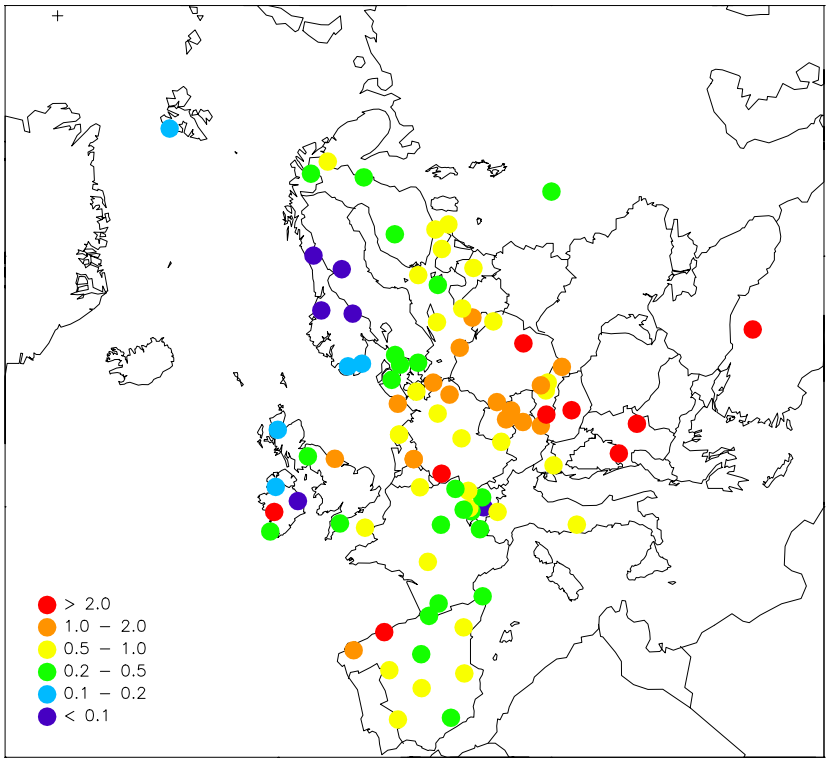

Figure 1.1: Geographical distribution of sulphur dioxide 2002. Unit: µg S/m^3.

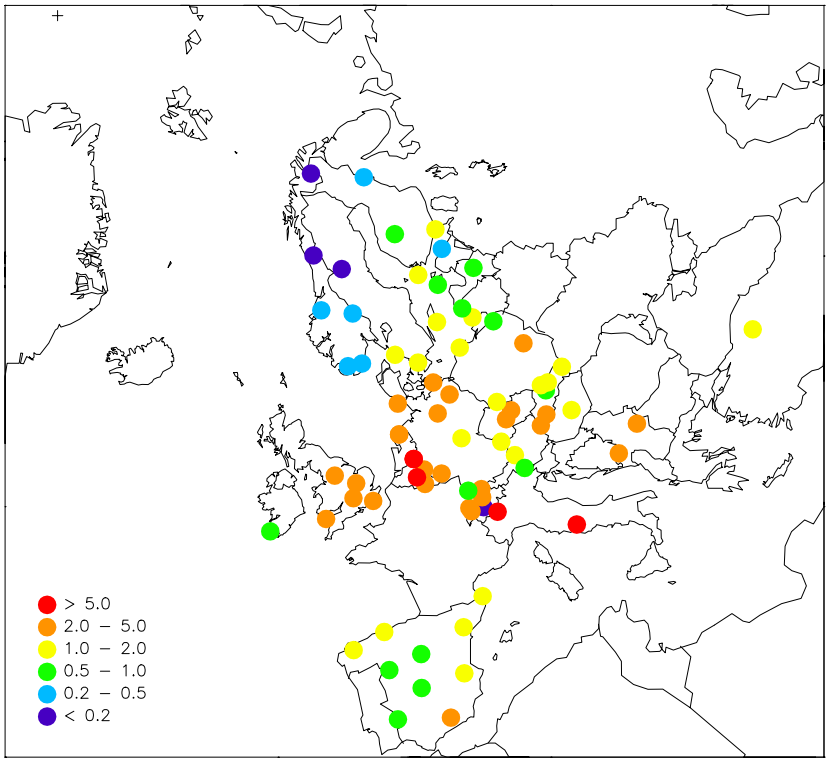

Figure 1.2: Geographical distribution of nitrogen dioxide 2002. Unit: µg N/m^3.

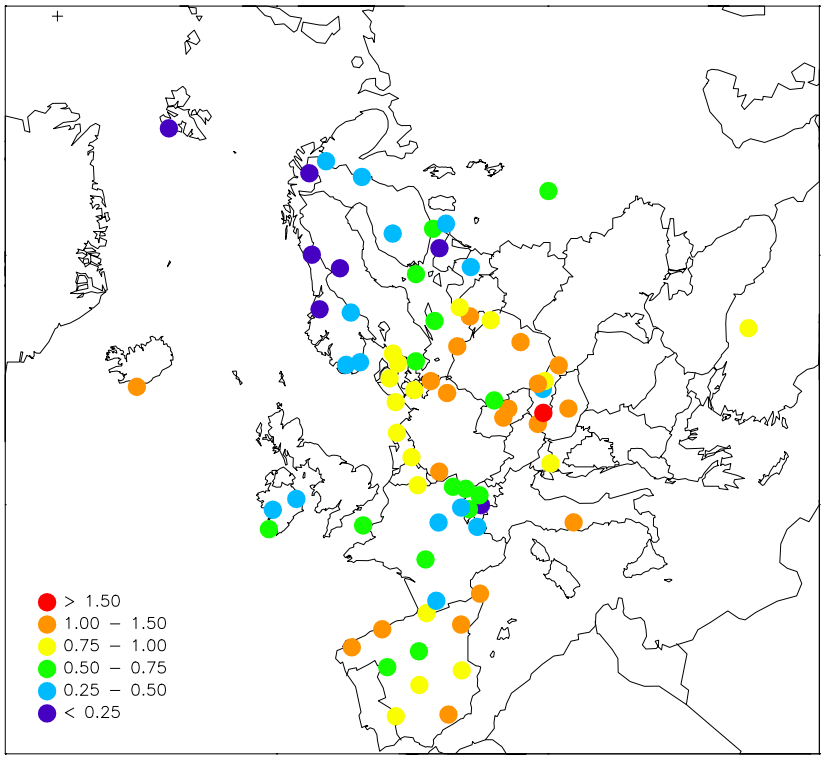

Figure 1.3: Geographical distribution of sulphate in aerosols 2002. Unit: μg S/m^3.

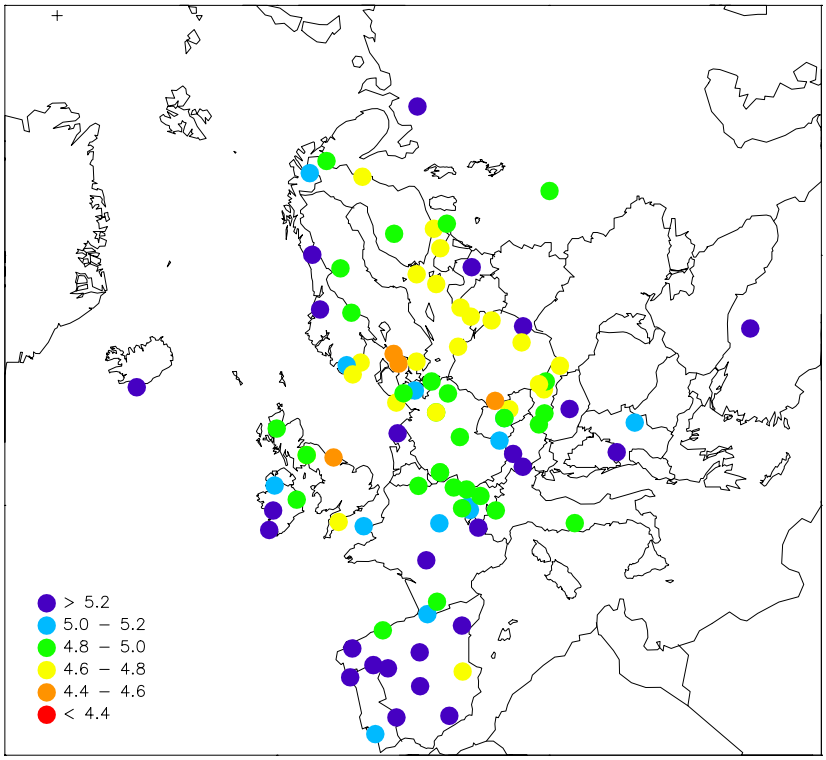

Figure 1.4: Geographical distribution of pH in precipitation 2002. Unit: pH units.

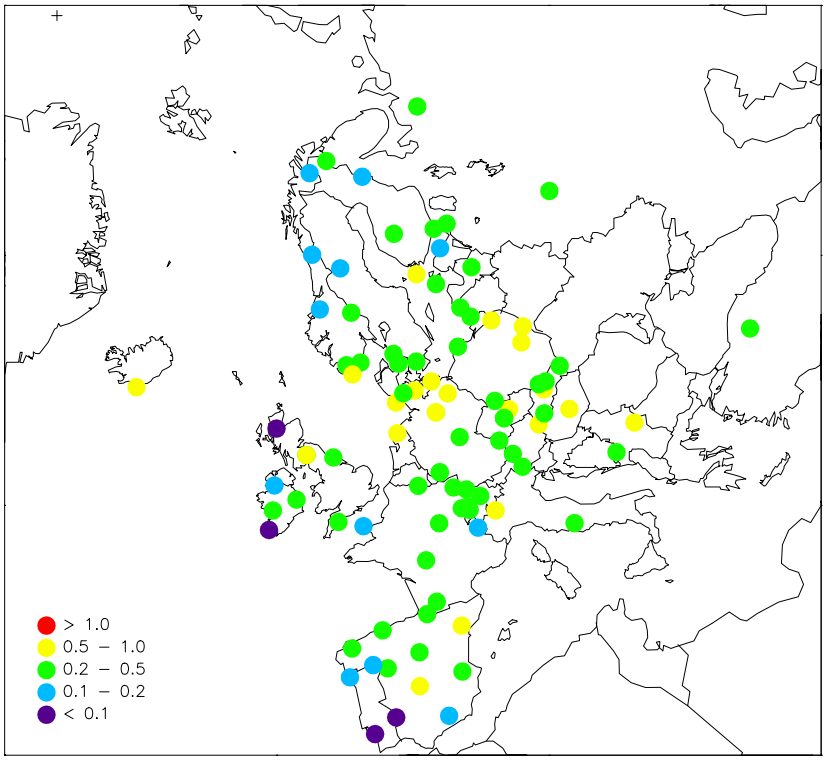

Figure 1.5: Geographical distribution of ammonium in precipitation 2002. Unit: mg N/l.

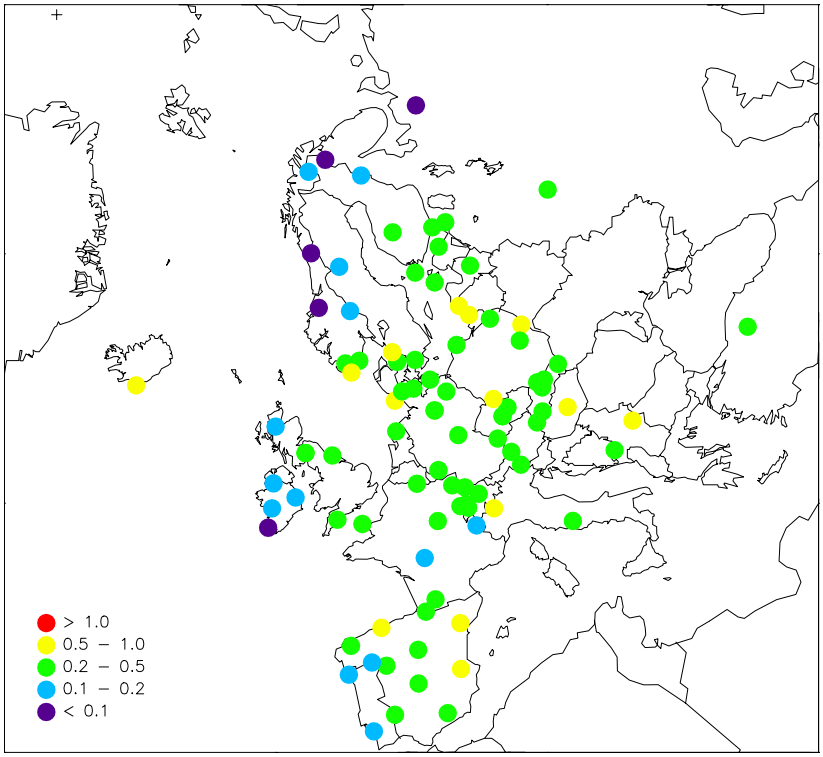

Figure 1.6: Geographical distribution of nitrate in precipitation 2002. Unit: mg N/l.

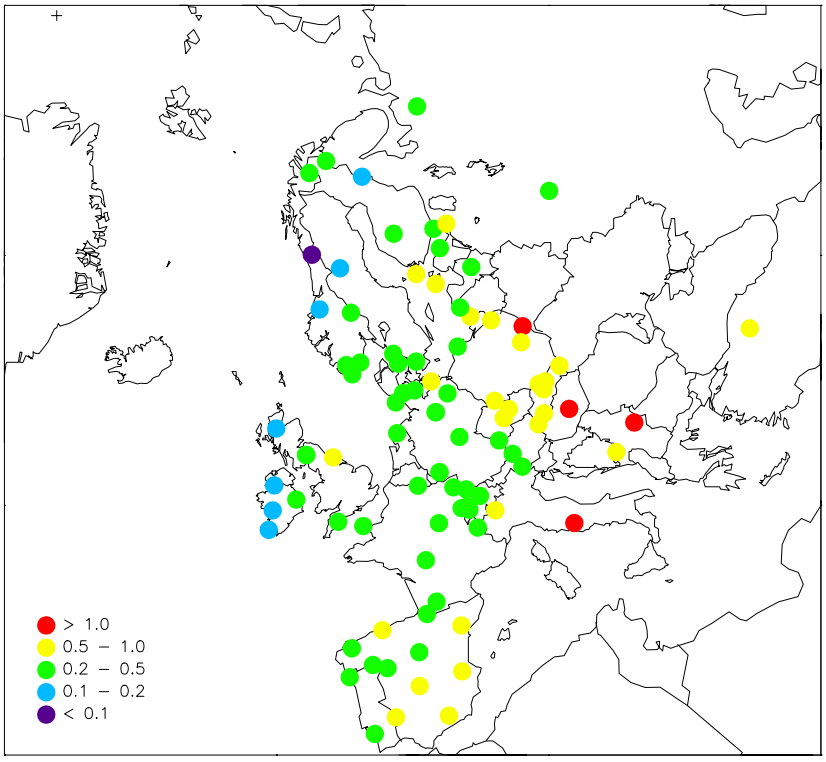

Figure 1.7: Geographical distribution of sulphate in precipitation 2002 (corrected for sea spray). Unit: mg S/l.

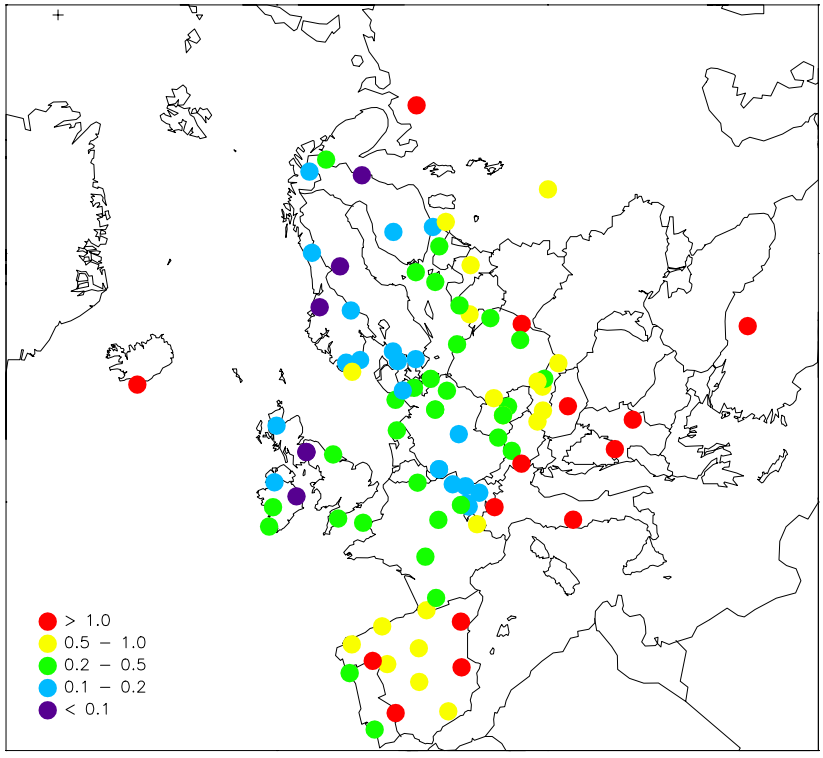

Figure 1.8: Geographical distribution of calcium in precipitation 2002. Unit: mg/l.

Annex 2

Annual statistics on precipitation data

AT0002R Illmitz Austria

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.60	0.00	8.30	289.9	99.7	0	89
Cl-	0.13	0.00	2.50	64.2	99.7	0	89
K+	0.04	0.01	1.09	19.1	99.3	21	88
Mg++	0.057	0.009	0.837	27.5	99.7	3	89
NH4+	0.64	0.01	5.87	308.9	99.7	1	89
NO3-	0.44	0.05	4.43	209.6	99.7	0	89
Na+	0.08	0.01	1.54	38.8	99.7	9	89
Precip	-	0.0	33.3	481.0	100.0	268	365
SO4--	0.74	0.04	7.93	355.8	99.7	0	89
SO4-- corr	0.73	0.03	7.91	350.4	99.7	0	89
cond	17.00	4.00	234.00	8177.1	99.9	0	95
pH	4.99	3.91	6.53	4961.9	100.0	0	97

AT0004R St. Koloman Austria

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.28	0.00	4.30	401.7	82.9	0	144
Cl-	0.12	0.00	3.60	179.3	82.9	3	143
K+	0.02	0.01	2.28	31.7	80.9	68	142
Mg++	0.026	0.005	0.599	37.1	82.9	26	144
NH4+	0.35	0.01	9.44	515.3	82.9	1	144
NO3-	0.33	0.02	9.54	480.0	82.8	0	142
Na+	0.12	0.01	4.79	168.4	81.2	22	143
Precip	-	0.0	48.5	1451.9	100.0	192	365
SO4--	0.23	0.01	4.76	341.4	82.9	0	143
SO4-- corr	0.22	0.00	4.71	320.9	82.9	0	143
cond	10.15	2.00	139.00	14734.9	81.8	0	148
pH	5.24	3.57	8.33	8294.8	83.0	0	153

AT0005R Vorhegg Austria

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.23	0.00	21.70	1628.1	99.9	0	126
Cl-	0.22	0.00	3.50	288.7	93.0	4	121
K+	0.04	0.01	1.84	55.1	99.8	43	125
Mg++	0.066	0.005	1.558	87.3	99.9	5	126
NH4+	0.28	0.01	5.84	365.7	99.9	3	126
NO3-	0.23	0.03	5.99	304.1	99.9	0	124
Na+	0.13	0.01	5.82	175.0	99.9	31	126
Precip	-	0.0	39.0	1325.8	100.0	233	365
SO4--	0.37	0.02	5.68	485.5	99.9	0	124
SO4-- corr	0.34	0.00	5.56	457.9	99.9	0	124
cond	12.50	2.00	189.00	16574.5	100.0	0	128
pH	5.37	3.86	7.79	5632.9	100.0	0	130

BY0004R Vysokoe Belarus

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	2.83	0.39	49.37	1327.6	99.8	0	126
Cl-	2.40	0.32	45.62	1125.4	98.6	0	126
K+	1.82	0.07	23.00	854.0	93.3	0	91
Mg++	0.533	0.065	10.438	250.0	99.0	0	115
NH4+	0.95	0.13	4.51	447.8	86.5	0	73
NO3-	0.95	0.10	12.09	446.3	99.8	0	126
Na+	1.37	0.20	20.00	644.2	94.0	0	93
Precip	-	0.0	37.5	468.8	100.0	244	365
SO4--	1.69	0.27	46.49	793.5	99.8	0	126
SO4-- corr	1.54	-6.64	44.44	720.8	99.8	1	126
cond	11.10	11.10	11.10	5203.7	1.3	0	1
pH	6.13	4.97	7.83	350.3	77.2	0	58

CH0002R Payerne Switzerland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.20	0.03	4.92	194.1	96.1	29	121
Cl-	0.16	0.01	6.25	154.2	96.1	0	121
K+	0.04	0.01	0.63	37.2	96.1	27	121
Mg++	0.019	0.001	0.383	19.3	96.1	2	121
NH4+	0.38	0.05	1.80	377.2	96.1	0	121
NO3-	0.27	0.04	1.49	265.3	96.1	0	121
Na+	0.08	0.00	3.45	77.9	96.1	0	121
Precip	-	0.0	32.5	989.6	100.0	200	365
SO4--	0.27	0.02	1.41	262.4	96.1	0	121
SO4-- corr	0.26	0.02	1.40	255.1	96.1	0	121
cond	9.58	2.34	54.90	9484.4	97.8	0	143
pH	5.13	4.14	6.92	7402.2	97.8	0	143

CH0004R Chaumont Switzerland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.11	0.03	1.02	146.3	99.8	10	42
Cl-	0.13	0.02	0.76	178.5	99.8	0	42
K+	0.02	0.01	0.18	29.1	99.8	6	42
Mg++	0.014	0.002	0.086	19.0	99.8	0	42
NH4+	0.22	0.04	1.88	301.2	99.8	0	42
NO3-	0.21	0.03	1.33	292.1	99.8	0	42
Na+	0.07	0.01	0.42	96.2	99.8	0	42
Precip	-	0.0	83.8	1368.5	100.0	5	53
SO4--	0.21	0.06	0.96	292.8	99.8	0	42
SO4-- corr	0.21	0.06	0.94	283.8	99.8	0	42
cond	8.29	3.21	37.46	11346.8	99.9	0	44
pH	5.02	4.48	6.50	13142.4	99.9	0	44

CH0005R Rigi Switzerland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.15	0.03	8.18	274.8	97.7	36	132
Cl-	0.07	0.00	0.99	117.8	97.7	0	131
K+	0.03	0.01	0.52	44.4	97.7	21	132
Mg++	0.012	0.001	0.438	21.7	97.7	7	132
NH4+	0.41	0.02	3.56	736.9	97.7	0	132
NO3-	0.30	0.03	2.26	549.2	97.7	0	131
Na+	0.04	0.00	0.58	66.2	97.7	0	132
Precip	-	0.0	80.8	1798.3	100.0	185	365
SO4--	0.27	0.02	1.57	476.7	97.7	0	131
SO4-- corr	0.26	0.02	1.56	470.2	97.7	0	131
cond	10.78	2.16	65.01	19380.5	98.8	0	156
pH	4.96	4.12	7.18	19501.3	98.8	0	156

CS0005R Kamenicki Vis Serbia and Montenegro

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.88	0.29	23.93	899.7	99.4	0	74
Cl-	0.87	0.08	9.75	418.7	100.0	0	77
K+	0.59	0.04	7.21	284.8	99.4	0	74
Mg++	0.144	0.030	1.710	69.0	99.4	0	74
NH4+	0.94	0.02	5.40	452.3	99.3	0	73
NO3-	0.66	0.02	10.92	317.1	100.0	0	77
Na+	0.51	0.05	3.19	243.7	99.4	0	74
Precip	-	0.0	25.0	479.1	100.0	288	365
SO4--	1.79	0.05	15.57	858.1	100.0	0	77
SO4-- corr	1.74	-0.05	15.45	832.6	100.0	0	77
cond	24.49	5.00	175.00	11732.0	100.0	0	77
pH	5.06	3.64	7.87	4160.7	100.0	0	77

CS0008R Zabljak Serbia and Montenegro

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.71	0.30	14.18	717.9	100.0	0	49
Cl-	1.53	0.09	34.76	640.8	100.0	0	49
K+	0.61	0.02	7.22	254.8	100.0	0	49
Mg++	0.125	0.020	1.240	52.3	100.0	0	49
NH4+	0.42	0.05	1.13	177.1	100.0	0	49
NO3-	0.34	0.02	3.22	144.7	100.0	0	49
Na+	0.49	0.05	4.56	204.7	100.0	0	49
Precip	-	0.0	27.3	419.0	100.0	316	365
SO4--	0.99	0.11	10.19	415.2	100.0	0	49
SO4-- corr	0.94	0.10	10.08	395.4	100.0	0	49
cond	23.09	1.00	185.00	9674.7	100.0	0	49
pH	5.69	4.62	8.02	858.8	100.0	0	49

CZ0001R Svratouch Czech Republic

January 2002 - December 2002
Weekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.35	0.05	1.97	314.7	93.7	0	43
Cl-	0.20	0.07	0.71	181.8	89.1	0	41
K+	0.08	0.01	0.84	69.5	93.7	0	43
Mg++	0.046	0.005	0.262	41.1	93.7	0	43
NH4+	0.51	0.01	1.97	452.1	94.0	0	45
NO3-	0.43	0.00	1.68	386.9	89.1	0	41
Na+	0.11	0.02	0.69	99.5	93.7	0	43
Precip	-	0.0	110.8	894.9	99.7	2	52
SO4--	0.66	0.01	1.94	594.5	89.1	0	41
SO4-- corr	0.65	0.01	1.90	581.9	89.1	0	41
cond	17.06	4.80	60.10	15263.7	87.9	0	40
pH	4.78	4.02	6.86	14847.4	89.4	0	43

CZ0003R Kosetice Czech Republic

January 2002 - December 2002
Weekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.56	0.03	2.79	432.6	96.2	0	42
Cl-	0.16	0.04	0.40	121.2	96.2	0	42
K+	0.09	0.01	0.36	67.5	96.2	0	42
Mg++	0.041	0.006	0.208	31.5	96.2	0	42
NH4+	0.46	0.02	2.26	355.5	96.2	0	43
NO3-	0.38	0.14	1.60	294.3	96.2	0	42
Na+	0.09	0.03	0.25	72.3	96.2	0	42
Precip	-	0.0	94.7	774.1	99.7	1	52
SO4--	0.51	0.18	2.72	397.8	96.2	0	42
SO4-- corr	0.51	0.17	2.71	390.9	96.2	0	42
cond	14.34	5.70	68.60	11098.2	96.2	0	42
pH	5.04	3.94	6.07	7088.4	96.2	0	42

CZ0003R Kosetice Czech Republic

January 2002 - December 2002
Daily data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.26	0.01	2.97	202.1	97.5	0	136
Cl-	0.18	0.01	3.16	138.3	97.8	0	133
K+	0.08	0.00	0.86	59.1	97.2	0	134
Mg++	0.027	0.001	0.384	20.9	97.5	0	136
NH4+	0.46	0.01	5.96	356.2	98.0	0	147
NO3-	0.38	0.09	3.72	294.5	97.8	0	133
Na+	0.09	0.00	1.69	67.6	97.5	0	136
Precip	-	0.0	41.2	776.9	100.0	189	365
SO4--	0.52	0.07	6.22	400.0	97.8	0	133
SO4-- corr	0.51	0.07	6.21	393.1	97.5	0	132
cond	15.63	3.90	86.50	12140.6	97.2	0	131
pH	4.84	3.80	7.27	11140.1	97.8	0	142

DE0001R Westerland Germany

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.38	0.10	2.40	271.0	99.0	0	40
Cl-	9.18	0.70	104.00	6584.3	99.0	0	40
K+	0.21	0.04	1.98	149.9	99.0	0	40
Mg++	0.656	0.070	7.728	470.5	99.0	0	40
NH4+	0.53	0.05	2.18	379.7	99.0	0	40
NO3-	0.51	0.18	1.27	368.9	99.0	0	40
Na+	5.21	0.36	56.56	3737.1	99.0	0	40
Precip	-	0.0	47.4	717.6	97.8	4	51
SO4--	0.90	0.42	4.93	644.3	99.0	0	40
SO4-- corr	0.46	0.15	1.42	332.4	99.0	0	40
cond	43.49	12.00	334.00	31205.9	99.0	0	40
pH	4.71	4.20	6.03	13839.6	99.0	0	40

DE0002R Langenbrugge Germany

January 2002 - December 2002
Daily data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.22	0.00	3.30	185.0	99.6	0	161
Cl-	0.68	0.00	15.00	582.4	99.6	0	161
K+	0.08	0.01	8.32	64.8	99.6	7	161
Mg++	0.062	0.002	1.011	53.5	99.6	5	161
NH4+	0.62	0.01	10.70	530.1	99.6	1	161
NO3-	0.48	0.12	5.13	408.4	99.6	0	161
Na+	0.38	0.01	8.63	329.1	99.6	5	161
Precip	-	0.0	69.3	857.9	100.0	170	365
SO4--	0.51	0.08	8.69	438.0	99.6	0	161
SO4-- corr	0.47	0.04	8.65	407.6	99.6	0	161
cond	18.08	6.00	132.00	15509.3	99.1	0	143
pH	4.79	3.74	6.47	13794.5	99.2	0	144

DE0002R Langenbrugge Germany

January 2002 - December 2002
Weekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.22	0.00	1.70	193.8	99.6	0	42
Cl-	0.74	0.10	5.50	665.5	99.6	0	42
K+	0.04	0.01	0.54	37.7	99.6	0	42
Mg++	0.084	0.008	0.394	75.1	99.6	0	42
NH4+	0.59	0.22	2.46	526.4	99.6	0	42
NO3-	0.45	0.01	2.88	399.4	99.6	0	42
Na+	0.41	0.02	3.06	370.3	99.6	0	42
Precip	-	0.0	100.0	898.4	95.9	4	50
SO4--	0.51	0.22	1.51	453.6	99.6	0	42
SO4-- corr	0.47	0.21	1.44	420.6	99.6	0	42
cond	14.53	7.00	32.00	13055.0	99.5	0	41
pH	4.85	3.98	5.86	12724.9	99.6	0	42

DE0003R Schauinsland Germany

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.13	0.00	2.00	252.6	99.9	0	44
Cl-	0.16	0.00	1.50	317.2	99.9	0	44
K+	0.02	0.01	0.19	42.5	99.9	0	44
Mg++	0.024	0.010	0.204	48.5	99.9	0	44
NH4+	0.29	0.05	1.95	574.9	99.9	0	44
NO3-	0.26	0.10	2.23	523.7	99.9	0	44
Na+	0.10	0.01	0.95	202.1	99.9	0	44
Precip	-	0.0	140.0	2009.4	99.7	6	52
SO4--	0.28	0.11	1.62	567.0	99.9	0	44
SO4-- corr	0.27	0.10	1.54	546.0	99.9	0	44
cond	8.49	5.00	42.00	17057.7	99.9	0	44
pH	4.92	4.30	5.69	23986.6	99.9	0	44

DE0004R Deuselbach Germany

January 2002 - December 2002
Daily data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.20	0.00	5.90	162.9	99.7	0	167
Cl-	0.46	0.00	7.70	380.5	99.7	0	167
K+	0.06	0.01	1.34	52.9	99.7	10	167
Mg++	0.050	0.005	0.513	41.0	99.7	1	167
NH4+	0.42	0.01	5.66	346.6	99.7	1	167
NO3-	0.40	0.06	3.37	331.8	99.7	0	167
Na+	0.26	0.01	4.45	210.5	99.7	4	167
Precip	-	0.0	38.7	822.9	100.0	172	365
SO4--	0.41	0.06	5.02	335.8	99.7	0	167
SO4-- corr	0.38	0.04	4.95	314.2	99.7	0	167
cond	13.68	1.50	119.00	11253.2	98.5	10	138
pH	4.89	3.88	6.61	10488.6	98.5	0	136

DE0004R Deuselbach Germany

January 2002 - December 2002
Weekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.19	0.10	2.60	166.7	99.7	0	46
Cl-	0.42	0.10	2.50	360.0	99.7	0	46
K+	0.04	0.01	0.75	30.0	99.7	0	46
Mg++	0.045	0.010	0.256	38.6	99.7	0	46
NH4+	0.41	0.08	2.53	352.8	99.7	0	46
NO3-	0.38	0.13	1.68	324.0	99.7	0	46
Na+	0.24	0.02	1.40	204.6	99.7	0	46
Precip	-	0.0	62.6	860.8	99.7	3	52
SO4--	0.40	0.15	2.31	345.7	99.7	0	46
SO4-- corr	0.38	0.11	2.26	327.5	99.7	0	46
cond	12.23	6.00	41.00	10525.9	99.5	0	44
pH	4.80	4.01	6.87	13604.1	99.7	0	46

DE0005R Brotjacklriegel Germany

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.32	0.10	2.90	407.1	100.0	0	47
Cl-	0.15	0.00	1.10	188.0	100.0	0	47
K+	0.04	0.01	0.18	48.8	100.0	0	47
Mg++	0.032	0.010	0.275	41.2	100.0	0	47
NH4+	0.44	0.15	2.17	558.7	100.0	0	47
NO3-	0.35	0.15	1.57	442.9	100.0	0	47
Na+	0.10	0.01	0.84	123.2	100.0	0	47
Precip	-	0.0	108.6	1279.9	99.7	5	52
SO4--	0.35	0.01	2.37	448.4	100.0	0	47
SO4-- corr	0.34	-0.01	2.30	434.7	100.0	0	47
cond	8.99	5.00	41.00	11503.9	99.9	0	46
pH	5.18	4.17	6.08	8386.2	100.0	0	47

DE0007R Neuglobsow Germany

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.35	0.10	5.50	221.3	99.7	0	44
Cl-	0.54	0.10	3.50	339.8	99.7	0	44
K+	0.07	0.01	1.03	47.6	99.7	0	44
Mg++	0.060	0.010	0.264	37.7	99.7	0	44
NH4+	0.57	0.21	2.08	358.6	99.7	0	44
NO3-	0.43	0.12	2.21	271.6	99.7	0	44
Na+	0.32	0.02	1.99	199.7	99.7	0	44
Precip	-	0.0	54.2	632.3	99.7	6	52
SO4--	0.52	0.16	2.61	329.8	99.7	0	44
SO4-- corr	0.49	0.14	2.56	312.2	99.7	0	44
cond	13.63	5.00	69.00	8616.2	99.5	0	43
pH	4.90	3.88	6.53	8033.6	99.7	0	44

DE0008R Schmucke Germany

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.15	0.00	1.00	197.5	99.7	0	46
Cl-	0.28	0.00	1.20	360.4	99.7	0	46
K+	0.05	0.01	0.41	62.3	99.7	0	46
Mg++	0.031	0.010	0.139	39.8	99.7	0	46
NH4+	0.40	0.08	1.60	507.7	99.7	0	46
NO3-	0.36	0.17	1.74	461.0	99.7	0	46
Na+	0.20	0.02	0.71	251.8	99.7	0	46
Precip	-	0.0	110.0	1281.4	99.7	2	52
SO4--	0.36	0.16	1.47	462.5	99.7	0	46
SO4-- corr	0.34	0.15	1.46	440.9	99.7	0	46
cond	11.27	6.00	34.00	14439.0	99.6	0	44
pH	4.83	3.95	5.96	19137.1	99.7	0	46

DE0009R Zingst Germany

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.46	0.10	2.10	312.0	99.7	0	44
Cl-	1.53	0.20	12.10	1034.3	99.7	0	44
K+	0.06	0.01	0.80	43.4	99.7	0	44
Mg++	0.134	0.010	0.985	90.1	99.7	0	44
NH4+	0.53	0.12	3.30	358.6	99.7	0	44
NO3-	0.46	0.17	4.12	308.5	99.7	0	44
Na+	0.88	0.03	6.21	592.8	99.7	0	44
Precip	-	0.0	55.0	674.4	99.7	6	52
SO4--	0.59	0.16	5.39	397.7	99.7	0	44
SO4-- corr	0.51	0.14	5.20	343.7	99.7	0	44
cond	16.26	6.00	67.00	10963.2	99.4	0	41
pH	4.89	3.78	5.96	8583.9	99.7	0	44

DK0005R Keldsnor Denmark

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.34	0.11	1.83	227.8	99.9	0	20
Cl-	2.73	0.43	12.81	1836.4	100.0	0	21
K+	0.35	0.07	1.72	235.6	99.9	0	20
Mg++	0.184	0.024	0.791	124.1	99.9	0	20
NH4+	0.90	0.18	4.24	609.6	100.0	0	21
NO3-	0.45	0.23	1.68	305.3	100.0	0	21
Na+	1.47	0.28	7.01	993.1	99.9	0	20
Precip	-	0.0	80.7	674.0	99.7	3	24
SO4--	0.57	0.34	2.57	386.6	100.0	0	21
SO4-- corr	0.45	0.23	2.23	304.7	100.0	0	21
cond	25.75	10.99	83.50	17357.3	100.0	0	21
pH	5.00	4.28	7.30	6709.9	99.9	0	20

DK0008R Anholt Denmark

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.15	0.06	0.31	108.0	100.0	0	22
Cl-	3.81	0.47	13.76	2712.9	100.0	0	22
K+	0.11	0.02	0.27	75.1	100.0	0	22
Mg++	0.240	0.037	0.872	171.1	100.0	0	22
NH4+	0.36	0.04	2.72	259.2	100.0	0	22
NO3-	0.47	0.15	1.45	337.7	100.0	0	22
Na+	2.16	0.28	7.59	1537.5	100.0	0	22
Precip	-	0.0	65.0	711.7	99.7	2	24
SO4--	0.58	0.25	1.45	411.5	100.0	0	22
SO4-- corr	0.40	0.12	1.33	287.2	100.0	0	22
cond	30.15	15.10	66.40	21459.3	100.0	0	22
pH	4.57	4.15	5.77	19346.7	90.9	0	21

DK0022R Sepstrup Sande Denmark

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.12	0.03	0.31	89.3	100.0	0	20
Cl-	2.26	0.43	6.43	1648.6	100.0	0	20
K+	0.08	0.03	0.19	55.9	100.0	0	20
Mg++	0.124	0.025	0.323	90.7	100.0	0	20
NH4+	0.49	0.13	1.69	359.7	100.0	0	20
NO3-	0.40	0.14	1.18	294.2	100.0	0	20
Na+	1.26	0.23	3.71	919.6	100.0	0	20
Precip	-	0.0	83.8	728.6	99.7	4	24
SO4--	0.46	0.30	1.11	338.4	100.0	0	20
SO4-- corr	0.36	0.11	0.94	265.0	100.0	0	20
cond	19.05	10.11	37.50	13880.1	100.0	0	20
pH	4.93	4.44	6.42	8633.6	100.0	0	20

EE0009R Lahemaa Estonia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.26	0.00	2.50	146.2	98.9	0	38
Cl-	0.58	0.10	3.30	327.2	99.6	0	40
K+	0.06	0.01	0.84	35.4	98.9	2	38
Mg++	0.038	0.011	0.296	21.2	98.9	0	38
NH4+	0.14	0.01	1.35	77.0	99.0	6	38
NO3-	0.27	0.01	1.52	148.2	99.6	0	40
Na+	0.22	0.03	2.35	125.2	98.9	0	38
Precip	-	0.0	42.3	559.4	99.7	10	52
SO4--	0.41	0.22	1.50	228.8	99.6	0	40
SO4-- corr	0.39	0.21	1.42	216.3	99.6	0	40
cond	12.19	4.00	48.00	6816.7	100.0	0	42
pH	4.79	4.09	6.53	9001.0	100.0	0	42

EE0011R Vilsandi Estonia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.41	0.10	2.40	175.2	69.7	0	18
Cl-	0.83	0.50	9.20	360.9	69.7	0	18
K+	0.24	0.01	0.90	102.5	69.7	0	18
Mg++	0.075	0.026	0.384	32.3	69.7	0	18
NH4+	0.28	0.03	1.46	123.4	69.7	0	18
NO3-	0.33	0.07	5.03	140.9	69.7	0	18
Na+	0.40	0.16	0.87	172.2	69.7	0	18
Precip	-	0.0	41.0	432.6	99.7	19	52
SO4--	0.63	0.19	2.83	270.8	69.7	0	18
SO4-- corr	0.58	0.17	2.58	252.5	69.7	0	18
cond	13.99	6.00	25.00	6052.0	69.7	0	18
pH	4.76	4.29	6.68	7560.5	69.7	0	18

ES0007R Viznar Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.83	0.19	7.70	564.1	95.4	0	68
Cl-	0.91	0.46	9.28	617.3	96.1	0	75
K+	0.13	0.03	0.48	87.0	95.4	3	68
Mg++	0.159	0.030	1.000	108.6	95.4	0	68
NH4+	0.17	0.04	1.54	118.0	95.6	29	71
NO3-	0.28	0.04	1.80	191.3	96.1	3	75
Na+	0.45	0.05	6.40	305.7	95.4	3	68
Precip	-	0.0	36.6	681.8	98.9	273	361
SO4--	0.56	0.21	2.85	381.4	96.1	0	75
SO4-- corr	0.50	0.16	2.77	341.4	96.1	0	75
cond	13.07	5.00	76.80	8908.7	86.6	0	76
pH	6.18	5.66	7.25	446.9	96.3	0	78

ES0008R Niembro Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.89	0.11	9.60	551.1	98.6	0	136
Cl-	6.93	0.52	114.83	4314.7	99.1	0	143
K+	0.27	0.05	3.20	170.6	98.6	0	136
Mg++	0.527	0.010	8.000	328.1	98.6	1	136
NH4+	0.48	0.04	7.07	299.2	98.7	13	137
NO3-	0.63	0.08	8.85	393.1	99.1	0	143
Na+	4.55	0.19	64.00	2830.8	98.6	0	136
Precip	-	0.0	33.2	622.6	98.6	208	360
SO4--	1.32	0.14	16.43	822.0	99.1	0	143
SO4-- corr	0.95	0.13	14.67	594.3	99.1	0	143
cond	46.80	2.50	188.50	29140.8	97.8	1	133
pH	4.85	3.81	7.83	8796.8	99.2	0	145

ES0009R Campisabalos Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.75	0.14	8.40	359.3	93.9	0	90
Cl-	0.91	0.53	4.52	435.2	96.3	0	108
K+	0.10	0.03	0.37	45.5	93.9	7	90
Mg++	0.088	0.020	0.500	41.9	93.9	0	90
NH4+	0.23	0.04	2.60	111.7	94.7	26	96
NO3-	0.40	0.04	3.27	190.4	96.3	1	108
Na+	0.50	0.05	4.90	238.9	93.9	1	90
Precip	-	0.0	24.6	477.4	97.3	211	355
SO4--	0.50	0.21	3.32	236.9	96.3	0	108
SO4-- corr	0.45	0.16	3.25	212.9	96.3	0	108
cond	13.68	5.20	77.70	6530.4	89.8	0	116
pH	5.79	4.35	7.56	773.9	97.2	0	119

ES0011R Barcarrola Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	2.15	0.59	19.20	1146.2	96.8	0	72
Cl-	2.09	0.57	24.90	1114.2	97.1	0	76
K+	0.28	0.08	4.90	148.1	96.8	0	72
Mg++	0.956	0.070	10.000	509.4	96.8	0	72
NH4+	0.10	0.04	1.10	53.1	97.1	48	76
NO3-	0.32	0.04	2.31	169.5	97.1	1	76
Na+	1.24	0.39	11.90	662.0	96.8	0	72
Precip	-	0.0	42.0	532.6	98.6	266	360
SO4--	0.64	0.31	3.03	341.9	97.1	0	76
SO4-- corr	0.53	0.07	2.61	279.7	97.1	0	76
cond	27.79	10.80	189.40	14802.9	97.1	0	77
pH	6.61	5.68	7.25	129.7	97.1	0	77

ES0012R Zarra Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	2.30	0.30	24.80	756.8	97.5	0	61
Cl-	1.31	0.54	15.48	430.7	98.7	0	64
K+	0.18	0.03	2.00	59.3	97.5	1	61
Mg++	0.189	0.030	1.600	62.3	97.5	0	61
NH4+	0.32	0.04	2.30	106.5	97.8	16	63
NO3-	0.67	0.08	5.68	220.0	98.7	0	64
Na+	0.88	0.16	102.00	288.1	97.5	0	61
Precip	-	0.0	58.2	329.4	97.0	278	354
SO4--	0.87	0.24	51.87	286.9	98.7	0	64
SO4-- corr	0.79	0.20	51.45	259.2	98.7	0	64
cond	23.38	2.50	161.40	7701.0	98.6	2	63
pH	4.78	4.05	7.77	5410.7	98.7	0	64

ES0013R Penausende Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.82	0.15	5.40	294.0	98.0	0	95
Cl-	0.90	0.36	4.28	320.0	98.8	0	101
K+	0.18	0.03	7.20	65.4	98.0	2	95
Mg++	0.089	0.020	0.540	31.8	98.0	0	95
NH4+	0.21	0.04	1.92	73.5	98.3	28	98
NO3-	0.31	0.04	3.38	110.0	98.8	2	101
Na+	0.48	0.10	3.00	170.9	98.0	0	95
Precip	-	0.0	14.6	357.4	98.4	241	359
SO4--	0.50	0.22	4.17	177.6	98.8	0	101
SO4-- corr	0.45	0.18	4.04	160.4	98.8	0	101
cond	12.86	2.50	119.80	4595.4	90.0	1	99
pH	6.07	5.43	7.41	304.8	98.8	0	102

ES0014R Els Torms Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	4.04	0.65	23.40	1023.4	89.2	0	51
Cl-	1.43	0.61	11.45	362.6	91.0	0	59
K+	0.24	0.08	1.50	60.7	89.2	0	51
Mg++	0.367	0.100	1.700	92.9	89.2	0	51
NH4+	0.51	0.04	3.44	129.0	90.3	4	55
NO3-	0.64	0.26	6.44	162.4	91.0	0	59
Na+	0.58	0.10	6.20	147.2	89.2	0	51
Precip	-	0.0	14.4	253.0	100.0	284	365
SO4--	0.97	0.44	9.67	245.7	91.0	0	59
SO4-- corr	0.89	0.39	9.14	225.3	91.0	0	59
cond	33.18	12.40	186.30	8395.2	91.1	0	60
pH	6.56	5.82	8.14	69.3	91.1	0	60

ES0015R Risco Llano Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.78	0.12	4.07	399.6	83.0	0	67
Cl-	1.57	0.60	19.74	803.1	84.9	0	73
K+	0.16	0.03	0.74	83.5	83.0	1	67
Mg++	0.151	0.040	1.200	77.6	83.0	0	67
NH4+	0.53	0.04	2.71	272.9	84.9	5	72
NO3-	0.46	0.14	4.87	236.1	85.2	0	74
Na+	0.90	0.11	6.70	461.1	83.0	0	67
Precip	-	0.0	29.0	512.6	97.3	243	355
SO4--	0.73	0.30	5.63	375.4	85.2	0	74
SO4-- corr	0.65	0.27	5.42	331.2	84.9	0	73
cond	19.48	5.70	122.20	9984.0	85.2	0	76
pH	6.07	5.15	7.62	435.3	85.6	0	77

ES0016R O Saviñao Spain

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.53	0.16	2.03	437.1	96.8	0	91
Cl-	1.77	0.54	16.36	1454.1	98.1	0	102
K+	0.16	0.03	2.70	132.8	96.8	2	91
Mg++	0.137	0.030	0.900	112.5	96.8	0	91
NH4+	0.34	0.04	3.60	282.1	97.1	11	93
NO3-	0.25	0.04	2.28	203.0	98.1	1	102
Na+	1.06	0.16	9.60	870.4	96.8	0	91
Precip	-	0.0	56.0	823.6	91.5	202	334
SO4--	0.50	0.25	3.39	413.9	98.1	0	102
SO4-- corr	0.42	0.06	3.21	345.2	98.1	0	102
cond	15.95	5.30	100.40	13137.0	92.4	0	112
pH	6.16	5.63	7.30	565.4	99.2	0	113

FI0004R Ahtari Finland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.10	0.01	0.64	53.8	99.9	0	46
Cl-	0.16	0.04	1.63	82.7	99.9	0	46
K+	0.04	0.01	1.03	21.0	99.9	0	46
Mg++	0.021	0.002	0.142	10.9	99.9	1	46
NH4+	0.26	0.00	3.11	132.8	99.9	1	46
NO3-	0.23	0.02	2.87	120.3	99.9	0	46
Na+	0.09	0.01	1.06	45.3	99.9	0	46
Precip	-	0.0	63.0	514.0	100.0	11	62
Precip off	-	0.00	30.90	570.1	100.0	203	365
SO4--	0.28	0.03	2.80	146.7	99.9	0	46
SO4-- corr	0.28	0.03	2.74	142.8	99.9	0	46
cond	10.90	3.00	85.00	5600.6	99.9	0	46
pH	4.83	4.03	5.83	7695.5	99.9	0	46

FI0009R Uto Finland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.27	0.03	2.55	70.0	99.1	0	63
Cl-	1.42	0.22	14.30	365.0	99.1	0	63
K+	0.12	0.01	1.73	30.0	99.1	0	63
Mg++	0.122	0.019	0.984	31.3	99.1	0	63
NH4+	0.55	0.02	3.72	141.3	99.1	0	63
NO3-	0.48	0.09	2.56	124.6	99.1	0	63
Na+	0.84	0.12	8.62	216.4	99.1	0	63
Precip	-	0.0	17.2	257.1	100.0	294	365
Precip off	-	0.00	21.70	438.5	100.0	240	365
SO4--	0.60	0.10	3.01	155.5	99.1	0	63
SO4-- corr	0.53	0.08	2.88	137.2	99.1	0	63
cond	23.52	6.00	91.00	6046.9	99.1	0	63
pH	4.68	3.90	6.25	5410.4	99.1	0	63

FI0017R Virolahti II Finland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.17	0.02	2.67	76.0	98.5	0	107
Cl-	0.33	0.04	4.75	142.6	98.5	0	107
K+	0.09	0.01	2.16	37.2	98.5	0	107
Mg++	0.036	0.002	0.435	15.7	98.5	1	107
NH4+	0.31	0.00	2.20	134.1	98.5	1	107
NO3-	0.32	0.03	2.65	140.3	98.5	0	107
Na+	0.17	0.01	2.95	73.4	98.5	0	107
Precip	-	0.0	30.4	435.6	99.7	235	364
Precip off	-	0.00	31.60	523.9	100.0	224	365
SO4--	0.45	0.04	4.46	197.8	98.5	0	107
SO4-- corr	0.44	0.04	4.38	190.2	98.5	0	107
cond	15.54	2.00	146.00	6771.0	98.5	0	107
pH	4.67	3.57	6.19	9274.9	98.5	0	107

FI0022R Oulanka Finland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.05	0.00	1.42	20.4	99.2	1	149
Cl-	0.13	0.01	1.85	50.1	99.2	2	149
K+	0.02	0.00	0.81	9.0	99.2	7	149
Mg++	0.012	0.002	0.246	4.6	99.2	10	149
NH4+	0.10	0.00	1.08	41.4	97.4	7	148
NO3-	0.14	0.01	0.69	54.9	99.2	2	149
Na+	0.07	0.01	1.19	27.1	99.2	0	149
Precip	-	0.0	23.2	395.9	100.0	195	365
Precip off	-	0.00	24.40	476.0	100.0	185	365
SO4--	0.21	0.02	1.02	81.5	99.2	0	149
SO4-- corr	0.20	0.02	1.00	79.2	99.2	0	149
cond	9.56	2.00	31.00	3784.1	99.3	0	150
pH	4.76	4.24	6.04	6842.2	99.3	0	150

FR0003R La Crouzille France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.42	0.05	14.46	376.5	58.3	0	48
Cl-	1.05	0.05	6.02	934.1	58.3	0	48
K+	0.08	0.01	1.05	67.6	58.3	5	48
Mg++	0.095	0.010	0.540	84.6	58.3	8	48
NH4+	0.27	0.01	4.20	237.0	58.4	3	49
NO3-	0.20	0.05	4.60	177.2	58.3	0	48
Na+	0.61	0.01	3.34	541.6	58.3	2	48
Precip	-	0.2	50.5	891.6	100.0	239	365
SO4--	0.31	0.05	2.90	274.0	58.3	0	48
SO4-- corr	0.26	0.05	2.84	227.9	58.3	0	48
cond	11.73	2.50	101.30	10458.6	60.0	0	54
pH	5.29	3.92	7.02	4624.7	60.0	0	54

FR0005R La Hague France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.38	0.06	4.84	369.7	91.1	0	130
Cl-	9.56	0.15	190.80	9383.1	91.1	0	130
K+	0.22	0.01	3.94	214.9	91.1	2	130
Mg++	0.695	0.020	13.550	681.5	91.1	0	130
NH4+	0.19	0.01	2.03	190.4	91.4	16	131
NO3-	0.21	0.03	1.79	202.2	91.1	0	130
Na+	5.40	0.10	108.57	5296.9	91.1	0	130
Precip	-	0.2	45.0	981.0	100.0	187	365
SO4--	0.70	0.11	9.13	691.0	91.1	0	130
SO4-- corr	0.25	0.02	2.45	247.6	91.1	0	130
cond	44.16	6.20	706.00	43318.2	92.5	0	136
pH	5.03	3.97	6.26	9163.0	92.5	0	136

FR0008R Donon France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.17	0.01	2.95	300.0	98.2	3	167
Cl-	0.32	0.03	12.76	555.2	98.2	10	167
K+	0.03	0.01	0.85	48.7	98.2	52	167
Mg++	0.031	0.010	0.900	53.4	98.2	69	167
NH4+	0.30	0.01	4.52	533.3	98.3	10	169
NO3-	0.28	0.04	2.73	488.3	98.2	0	167
Na+	0.18	0.01	7.30	320.2	98.2	18	167
Precip	-	0.1	56.0	1749.7	100.0	176	365
SO4--	0.30	0.05	2.39	527.0	98.2	0	167
SO4-- corr	0.28	0.04	2.37	498.0	98.2	0	167
cond	10.97	2.50	79.60	19193.9	98.4	0	174
pH	4.88	3.90	6.63	23004.5	98.4	0	174

FR0009R Revin France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.20	0.03	3.33	316.0	96.2	0	151
Cl-	0.94	0.03	9.97	1444.0	96.2	1	151
K+	0.06	0.01	0.35	89.2	96.2	15	151
Mg++	0.079	0.010	0.690	121.5	96.2	23	151
NH4+	0.37	0.04	3.75	573.2	96.5	0	155
NO3-	0.31	0.05	2.51	481.1	96.2	0	151
Na+	0.57	0.01	5.67	880.9	96.2	2	151
Precip	-	0.1	54.0	1540.0	100.0	179	365
SO4--	0.38	0.06	2.10	588.6	96.2	0	151
SO4-- corr	0.33	0.05	2.00	513.7	96.2	0	151
cond	13.99	3.20	121.60	21539.8	96.9	0	163
pH	4.94	3.80	6.87	17602.7	96.9	0	163

FR0010R Morvan France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.21	0.01	3.01	224.1	84.2	1	129
Cl-	0.73	0.03	11.63	780.3	84.2	2	129
K+	0.07	0.01	4.31	73.9	84.2	16	129
Mg++	0.062	0.010	0.830	65.7	84.2	32	129
NH4+	0.33	0.01	3.98	345.1	84.4	1	131
NO3-	0.25	0.01	4.76	266.6	84.2	1	129
Na+	0.45	0.01	6.95	476.4	84.2	5	129
Precip	-	0.1	39.4	1061.6	100.0	183	365
SO4--	0.34	0.04	2.31	357.4	84.2	0	129
SO4-- corr	0.30	0.04	2.06	316.4	84.2	0	129
cond	11.84	2.00	106.80	12565.7	85.2	0	140
pH	5.02	3.80	6.65	10115.0	85.2	0	140

FR0012R Iraty France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.54	0.02	34.94	815.4	92.7	0	167
Cl-	1.12	0.03	8.96	1696.8	92.7	2	167
K+	0.06	0.01	3.69	95.7	92.7	39	167
Mg++	0.104	0.010	0.680	156.9	92.7	28	167
NH4+	0.31	0.01	9.79	472.2	92.8	17	168
NO3-	0.24	0.03	2.44	359.9	92.7	0	167
Na+	0.65	0.01	5.09	988.4	92.7	3	167
Precip	-	0.1	72.0	1514.8	100.0	154	365
SO4--	0.42	0.08	6.09	630.1	92.7	0	167
SO4-- corr	0.36	0.04	6.01	546.4	92.7	0	167
cond	14.58	3.30	161.30	22082.0	93.1	0	178
pH	5.01	3.85	7.86	14889.4	93.1	0	178

FR0013R Peyrusse Vieille France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.44	0.03	6.04	355.1	89.9	0	120
Cl-	1.34	0.05	13.90	1078.6	89.9	0	120
K+	0.06	0.01	0.46	50.0	89.9	9	120
Mg++	0.113	0.010	0.970	91.2	89.9	14	120
NH4+	0.32	0.01	4.56	260.4	89.9	3	121
NO3-	0.29	0.03	6.85	232.4	89.9	0	120
Na+	0.78	0.01	7.58	623.2	89.9	1	120
Precip	-	0.1	45.6	803.7	100.0	206	365
SO4--	0.49	0.10	3.78	395.1	89.9	0	120
SO4-- corr	0.43	0.05	3.69	342.4	89.9	0	120
cond	16.72	3.80	149.10	13441.2	90.2	0	126
pH	4.89	3.69	6.97	10289.0	90.2	0	126

FR0014R Montandon France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.21	0.01	5.00	279.2	92.8	2	157
Cl-	0.23	0.03	4.70	296.4	92.8	14	157
K+	0.03	0.01	0.31	44.2	92.8	56	157
Mg++	0.024	0.010	0.320	30.9	92.8	77	157
NH4+	0.37	0.01	3.50	481.5	93.2	5	162
NO3-	0.31	0.03	3.33	398.5	92.8	0	157
Na+	0.13	0.01	2.54	164.8	92.8	28	157
Precip	-	0.1	42.2	1298.6	100.0	165	365
SO4--	0.32	0.04	2.72	420.6	92.8	0	157
SO4-- corr	0.31	0.04	2.69	404.7	92.8	0	157
cond	11.04	2.00	118.10	14332.6	93.9	0	166
pH	4.92	3.73	6.91	15721.7	93.9	0	166

FR0015R La Tardière France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.23	0.02	4.32	238.3	95.0	0	135
Cl-	3.00	0.07	71.34	3099.5	95.0	0	135
K+	0.10	0.01	1.57	99.2	95.0	3	135
Mg++	0.222	0.010	5.260	229.8	95.0	6	135
NH4+	0.36	0.04	4.16	375.2	95.1	0	137
NO3-	0.22	0.03	2.38	223.6	95.0	0	135
Na+	1.72	0.01	40.54	1780.5	95.0	1	135
Precip	-	0.1	45.6	1033.0	100.0	178	365
SO4--	0.47	0.09	3.69	483.5	95.0	0	135
SO4-- corr	0.32	0.04	2.78	333.6	95.0	0	135
cond	20.31	4.40	274.70	20981.0	96.1	0	148
pH	5.09	4.09	6.70	8341.2	96.1	0	148

FR0016R Le Casset France

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.57	0.04	11.08	479.4	92.1	0	115
Cl-	0.14	0.03	15.84	122.1	92.1	19	115
K+	0.08	0.01	16.76	70.4	92.1	23	115
Mg++	0.037	0.010	0.360	31.5	92.1	46	115
NH4+	0.15	0.01	1.27	126.3	92.2	20	116
NO3-	0.17	0.04	1.82	144.2	92.1	0	115
Na+	0.06	0.01	1.52	51.8	92.1	31	115
Precip	-	0.2	43.0	844.2	100.0	229	365
SO4--	0.22	0.04	1.76	183.7	92.1	0	115
SO4-- corr	0.21	0.02	1.70	177.8	92.1	0	115
cond	7.48	1.70	61.30	6313.8	93.8	0	119
pH	5.28	4.51	7.38	4472.4	93.8	0	119

GB0002R Eskdalemuir United Kingdom

January 2002 - December 2002
Daily data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.09	0.01	1.96	175.7	99.2	13	234
Cl-	2.32	0.00	34.50	4380.6	99.2	0	234
K+	0.08	0.01	2.90	146.6	99.2	18	234
Mg++	0.149	0.005	2.370	281.4	99.2	12	234
NH4+	0.21	0.00	6.39	391.4	99.2	10	234
NO3-	0.29	0.01	171.01	545.4	99.2	1	234
Na+	1.31	0.01	19.66	2477.3	99.2	12	234
Precip	-	0.0	29.8	1890.4	100.0	115	365
SO4--	0.33	0.06	3.80	614.3	99.2	0	234
SO4-- corr	0.22	-0.04	3.34	408.2	99.2	0	234
cond	19.57	0.00	4660.00	36991.3	98.9	38	229
pH	4.69	2.06	6.63	38413.5	99.2	0	234

GB0002R Eskdalemuir United Kingdom

January 2002 - December 2002
Biweekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.08	0.02	0.22	141.8	100.0	0	24
Cl-	2.40	0.20	7.10	4279.4	100.0	0	24
K+	0.23	0.03	1.48	412.4	100.0	0	24
Mg++	0.148	0.021	0.447	262.9	100.0	0	24
NH4+	0.77	0.06	5.76	1370.5	100.0	0	24
NO3-	0.20	0.05	0.91	358.8	100.0	0	24
Na+	1.35	0.07	3.99	2406.5	100.0	0	24
Precip	-	0.0	176.2	1780.4	99.7	2	26
SO4--	0.40	0.22	0.94	712.4	100.0	0	24
SO4-- corr	0.29	0.06	0.78	517.4	100.0	0	24
cond	22.68	11.00	68.00	40389.1	100.0	0	24
pH	4.90	4.38	7.32	22544.7	100.0	0	24

GB0006R Lough Navar United Kingdom

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.20	0.06	1.24	265.4	99.9	0	27
Cl-	6.11	0.50	26.20	8314.2	99.9	0	27
K+	0.14	0.01	0.54	184.9	99.9	0	27
Mg++	0.395	0.033	1.742	537.9	99.9	0	27
NH4+	0.16	0.02	1.03	222.8	99.9	0	27
NO3-	0.12	0.03	0.64	156.6	99.9	0	27
Na+	3.48	0.25	15.21	4739.8	99.9	0	27
Precip	-	1.1	156.2	1360.2	98.1	0	28
SO4--	0.41	0.16	1.24	562.2	99.9	0	27
SO4-- corr	0.12	-0.03	0.73	168.7	99.9	0	27
cond	27.90	5.00	86.00	37947.4	99.9	1	27
pH	5.12	4.69	6.40	10426.1	99.9	0	27

GB0013R Yarner Wood United Kingdom

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.26	0.08	2.27	342.2	100.0	0	24
Cl-	7.98	0.20	18.50	10597.8	100.0	0	24
K+	0.20	0.03	0.49	260.5	100.0	0	24
Mg++	0.534	0.018	1.251	709.6	100.0	0	24
NH4+	0.27	0.04	4.39	360.5	100.0	0	24
NO3-	0.27	0.05	4.02	352.1	100.0	0	24
Na+	4.58	0.06	10.83	6090.5	100.0	0	24
Precip	-	0.0	183.4	1328.3	99.6	1	26
SO4--	0.67	0.18	4.70	886.5	100.0	0	24
SO4-- corr	0.29	0.04	4.25	386.5	100.0	0	24
cond	39.68	5.00	65.00	52712.7	99.8	1	23
pH	4.77	4.28	5.68	22690.9	100.0	0	24

GB0014R High Muffles United Kingdom

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.23	0.05	1.90	205.0	99.9	0	24
Cl-	2.40	0.20	14.80	2112.5	99.9	0	24
K+	0.09	0.04	0.55	78.0	99.9	0	24
Mg++	0.163	0.017	0.953	143.5	99.9	0	24
NH4+	0.47	0.05	1.36	413.8	99.9	0	24
NO3-	0.43	0.19	1.18	375.8	99.9	0	24
Na+	1.30	0.04	8.39	1144.7	99.9	0	24
Precip	-	0.0	115.4	878.8	97.8	1	26
SO4--	0.66	0.30	1.82	579.4	99.9	0	24
SO4-- corr	0.55	0.29	1.29	482.3	99.9	0	24
cond	26.90	11.00	95.00	23640.2	99.9	0	24
pH	4.44	3.86	6.45	31681.9	99.9	0	24

GB0015R Strathvaich Dam United Kingdom

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.11	0.03	0.91	125.9	100.0	0	26
Cl-	4.16	0.20	10.10	4858.9	100.0	0	26
K+	0.09	0.01	0.70	100.6	100.0	3	26
Mg++	0.267	0.016	0.658	311.3	100.0	0	26
NH4+	0.07	0.01	2.51	82.3	100.0	7	26
NO3-	0.11	0.02	2.16	123.7	100.0	0	26
Na+	2.40	0.05	5.83	2799.9	100.0	0	26
Precip	-	3.2	155.0	1167.2	99.7	0	26
SO4--	0.30	0.16	2.00	351.4	100.0	0	26
SO4-- corr	0.10	-0.01	1.62	117.5	100.0	0	26
cond	22.11	5.00	45.00	25803.8	99.7	1	25
pH	4.88	4.31	6.65	15517.3	100.0	0	26

HU0002R K-Puszta Hungary

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.64	0.44	19.70	522.7	98.9	0	71
Cl-	0.86	0.23	4.73	272.5	88.6	0	71
K+	0.21	0.05	1.45	66.1	98.9	0	71
Mg++	0.333	0.100	1.750	105.9	98.9	0	71
NH4+	0.77	0.02	2.86	245.6	99.1	5	73
NO3-	0.57	0.01	3.23	181.0	88.6	3	71
Na+	0.95	0.27	3.46	302.4	98.6	1	70
Precip	-	0.3	24.1	318.3	100.0	288	365
Precip off	-	1.00	25.70	425.5	100.0	288	365
SO4--	1.43	0.45	9.88	455.7	88.6	0	71
SO4-- corr	1.36	0.30	9.61	431.6	88.6	0	71
cond	29.44	11.10	188.10	9370.1	87.9	0	70
pH	5.71	4.43	7.34	618.0	87.9	0	70

IE0001R Valentia Obs. Ireland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.44	0.03	11.96	778.0	99.0	10	210
Cl-	16.37	0.35	549.12	29200.4	99.0	0	210
K+	0.49	0.03	23.57	869.6	99.0	13	209
Mg++	1.191	0.025	38.900	2123.8	99.0	9	210
NH4+	0.09	0.02	2.03	154.7	98.3	78	208
NO3-	0.07	0.01	2.96	129.0	99.0	15	210
Na+	9.25	0.18	309.90	16488.4	99.0	0	210
Precip	-	0.0	55.7	1783.3	100.0	110	365
Precip off	-	0.00	37.40	1919.0	100.0	99	365
SO4--	0.89	0.03	26.12	1585.4	99.0	0	210
SO4-- corr	0.12	-0.92	6.97	207.9	99.0	0	210
cond	67.55	3.30	2001.00	120469.4	99.0	0	210
pH	5.38	4.05	7.12	7409.9	99.0	0	210

IE0002R Turlough Hill Ireland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.09	0.00	0.90	90.5	100.0	0	89
Cl-	2.58	0.00	25.70	2600.8	100.0	0	89
K+	0.05	0.00	1.02	48.5	100.0	0	89
Mg++	0.183	0.000	1.800	184.5	100.0	0	89
NH4+	0.26	0.01	2.21	258.1	100.0	0	89
NO3-	0.18	0.00	2.31	181.2	100.0	0	89
Na+	1.70	0.06	14.24	1717.1	100.0	0	89
Precip	-	0.2	22.6	1008.4	100.0	276	365
SO4--	0.37	0.09	2.48	372.8	100.0	0	89
SO4-- corr	0.23	0.00	1.70	232.2	100.0	0	89
cond	18.71	4.00	104.00	18867.3	99.8	0	84
pH	4.96	4.10	6.60	11187.9	99.8	0	84

IE0003R The Burren Ireland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.50	0.00	5.87	336.1	100.0	0	226
Cl-	15.76	0.30	187.20	10642.9	100.0	0	226
K+	0.42	0.00	10.35	282.3	100.0	0	226
Mg++	1.090	0.027	11.690	736.1	100.0	0	226
NH4+	0.23	0.00	6.87	156.3	100.0	0	226
NO3-	0.11	0.00	2.87	74.6	100.0	0	226
Na+	9.41	0.21	100.25	6356.5	100.0	0	226
Precip	-	0.1	30.7	675.3	100.0	139	365
SO4--	0.97	0.03	9.12	652.3	100.0	0	226
SO4-- corr	0.19	-0.63	5.27	129.9	100.0	0	226
cond	69.11	7.00	721.00	46670.3	99.5	0	211
pH	5.29	4.10	6.70	3446.1	99.5	0	211

IT0001R Montelibretti Italy

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	2.51	0.08	35.35	1649.4	95.0	0	47
Cl-	2.54	0.12	40.33	1666.6	95.0	0	47
K+	0.95	0.05	8.39	621.3	95.0	0	47
Mg++	0.229	0.010	2.610	150.5	95.0	0	47
NH4+	0.34	0.01	3.84	222.7	95.0	0	47
NO3-	0.48	0.01	3.77	316.8	95.0	0	47
Na+	1.85	0.12	21.45	1215.7	95.0	0	47
Precip	-	1.0	58.0	657.0	13.2	0	48
SO4--	1.16	0.14	5.63	762.3	95.0	0	47
SO4-- corr	1.04	0.09	5.45	685.9	95.0	0	47
cond	34.27	6.10	164.00	22516.9	95.0	0	47
pH	4.98	4.10	7.90	6919.3	95.0	0	47

IT0004R Ispra Italy

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.07	0.01	30.57	2064.4	99.6	0	92
Cl-	0.40	0.05	4.40	771.7	99.6	0	92
K+	0.07	0.00	0.74	134.2	99.6	0	92
Mg++	0.069	0.001	1.139	133.3	94.1	0	90
NH4+	0.64	0.01	5.58	1234.1	97.9	0	91
NO3-	0.50	0.00	5.97	968.0	99.6	0	92
Na+	0.21	0.01	3.09	397.8	99.6	0	92
Precip	-	0.0	115.1	1920.9	100.0	271	365
SO4--	0.59	0.03	4.57	1127.9	99.6	0	92
SO4-- corr	0.57	0.03	4.31	1090.6	99.6	0	92
cond	20.90	3.32	167.95	40140.9	99.5	0	87
pH	4.81	3.97	7.12	29790.0	99.5	0	88

LT0015R Preila Lithuania

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.84	0.20	4.05	378.8	100.0	0	93
Cl-	3.21	0.37	22.44	1448.8	100.0	0	93
K+	0.26	0.10	1.20	118.7	100.0	0	93
NH4+	0.48	0.06	2.60	216.0	100.0	0	93
NO3-	0.57	0.14	4.30	258.8	100.0	0	93
Na+	1.94	0.20	15.00	874.6	100.0	0	93
Precip	-	0.0	20.0	452.0	92.3	244	337
SO4--	0.81	0.12	3.62	364.5	100.0	0	93
SO4-- corr	0.65	0.07	3.09	291.3	100.0	0	93
cond	28.88	3.20	146.00	13052.8	99.8	0	92
pH	4.71	3.88	6.47	8917.0	100.0	0	93

LV0010R Rucava Latvia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.36	0.03	7.21	252.9	93.6	0	106
Cl-	1.16	0.11	14.84	807.1	96.6	0	105
K+	0.10	0.02	0.64	67.6	91.1	2	104
Mg++	0.107	0.030	0.990	74.3	93.2	0	105
NH4+	0.47	0.02	5.08	327.1	97.4	0	112
NO3-	0.50	0.02	5.88	350.1	96.8	0	106
Na+	0.56	0.05	7.24	388.1	93.6	0	106
Precip	-	0.0	39.1	695.0	100.0	239	365
SO4--	0.52	0.13	4.44	359.8	96.8	0	106
SO4-- corr	0.46	0.10	4.19	321.4	96.8	0	106
cond	19.18	4.46	179.00	13328.4	94.7	0	107
pH	4.72	3.45	6.91	13098.2	97.7	0	109

LV0016R Zoseni Latvia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.98	0.12	9.36	606.6	94.4	0	129
Cl-	0.73	0.03	15.08	453.6	89.2	0	104
K+	0.27	0.03	8.08	166.7	93.1	0	117
Mg++	0.211	0.040	1.340	130.0	94.3	0	128
NH4+	0.45	0.01	6.57	279.3	96.9	2	144
NO3-	0.39	0.04	2.15	241.4	89.4	0	106
Na+	0.42	0.04	4.36	256.8	95.2	0	131
Precip	-	0.0	18.8	617.1	100.0	199	365
SO4--	0.45	0.05	2.47	278.0	89.4	0	106
SO4-- corr	0.41	0.04	2.45	254.5	89.4	0	106
cond	18.12	3.47	119.70	11180.8	96.4	0	141
pH	5.31	3.82	7.72	3044.6	97.2	0	142

NL0009R Kollumerwaard Netherlands

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.31	0.04	3.57	258.0	92.9	0	105
Cl-	2.86	0.06	37.76	2368.3	96.3	0	133
H+	-7.00	-159.60	43.80	-5807.6	96.4	0	149
K+	0.14	0.01	1.78	119.9	93.5	0	106
Mg++	0.203	0.012	2.535	168.7	93.5	0	106
NH4+	0.67	0.08	3.38	553.3	94.8	0	121
NO3-	0.38	0.00	2.17	316.4	95.7	0	132
Na+	1.55	0.04	20.47	1282.4	92.9	0	105
Precip	-	0.0	22.1	829.2	100.0	185	365
SO4--	0.57	0.12	3.13	470.2	95.7	0	132
SO4-- corr	0.43	0.11	2.74	360.6	95.7	0	132
cond	21.61	5.90	173.00	17919.3	90.0	0	85
pH	5.40	4.49	7.06	3324.9	97.0	0	150

NO0001R Birkenes Norway

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.10	0.01	2.16	158.4	98.7	9	183
Cl-	1.52	0.01	24.00	2396.3	98.9	1	184
K+	0.09	0.01	3.80	146.4	98.7	7	183
Mg++	0.119	0.005	1.423	187.1	98.9	6	184
NH4+	0.32	0.01	3.89	496.7	98.9	17	184
NO3-	0.33	0.01	3.96	516.4	98.9	13	184
Na+	0.90	0.02	12.88	1408.9	98.9	0	184
Precip	-	0.0	70.9	1574.2	100.0	151	365
SO4--	0.43	0.03	2.74	674.1	98.9	0	184
SO4-- corr	0.35	-0.03	2.69	557.6	98.9	0	184
cond	18.72	2.50	87.30	29472.5	97.8	0	160
pH	4.71	3.87	6.53	30326.2	97.7	0	160

NO0008R Skreaadalen Norway

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.19	0.02	3.40	381.7	99.0	0	169
Cl-	3.19	0.08	26.69	6403.7	99.3	0	173
K+	0.26	0.04	1.85	526.4	98.5	0	165
Mg++	0.202	0.005	1.651	405.6	99.7	1	174
NH4+	0.35	0.01	7.30	701.5	98.5	7	165
NO3-	0.23	0.01	4.45	461.4	99.2	2	172
Na+	1.83	0.06	14.84	3672.6	99.6	0	173
Precip	-	0.0	60.3	2007.5	100.0	167	365
SO4--	0.36	0.04	3.90	733.5	99.3	0	173
SO4-- corr	0.22	-0.11	3.82	443.1	99.3	0	173
cond	20.20	4.00	164.50	40560.1	98.8	0	168
pH	5.17	3.60	6.92	13599.9	98.0	0	160

NO0015R Tustervatn Norway

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.11	0.01	2.26	128.6	98.7	0	151
Cl-	2.58	0.06	27.04	3000.0	98.0	0	151
K+	0.11	0.01	1.02	127.4	98.6	2	150
Mg++	0.173	0.005	1.780	201.4	98.9	4	152
NH4+	0.14	0.01	3.53	157.3	98.5	16	150
NO3-	0.07	0.01	2.06	82.2	98.7	12	151
Na+	1.42	0.03	15.97	1650.0	98.0	0	151
Precip	-	0.0	63.7	1162.4	100.0	156	365
SO4--	0.20	0.02	1.79	237.5	98.9	0	152
SO4-- corr	0.09	-0.10	1.74	102.9	98.9	0	152
cond	13.30	2.50	100.80	15461.2	97.3	0	132
pH	5.38	4.73	6.49	4842.0	94.5	0	126

NO0039R Kaarvatn Norway

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.08	0.01	0.76	105.6	98.0	0	142
Cl-	1.61	0.06	15.02	2089.0	98.3	0	144
K+	0.09	0.01	0.86	116.9	96.5	4	140
Mg++	0.110	0.005	0.838	142.6	98.3	5	144
NH4+	0.10	0.01	1.01	132.4	96.5	23	140
NO3-	0.07	0.01	0.81	87.6	98.3	26	144
Na+	0.89	0.02	7.62	1156.8	98.3	0	144
Precip	-	0.0	51.4	1297.9	100.0	212	365
SO4--	0.18	0.01	0.88	230.2	98.3	1	144
SO4-- corr	0.10	-0.02	0.77	135.3	98.3	1	144
cond	10.87	2.80	50.70	14109.7	97.7	0	132
pH	5.26	4.56	6.70	7117.0	95.7	0	126

NO0041R Osen Norway

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.11	0.01	1.05	84.0	99.6	3	111
Cl-	0.22	0.03	2.63	162.1	100.0	0	112
K+	0.12	0.01	0.82	88.9	98.8	3	109
Mg++	0.030	0.005	0.283	21.9	100.0	31	112
NH4+	0.25	0.01	2.33	183.7	98.8	0	109
NO3-	0.19	0.01	1.77	140.0	100.0	14	112
Na+	0.13	0.01	1.45	93.7	100.0	0	112
Precip	-	0.0	40.9	737.5	99.7	252	364
SO4--	0.26	0.01	2.12	188.9	100.0	0	112
SO4-- corr	0.25	0.01	2.07	181.6	100.0	0	112
cond	10.30	3.10	59.90	7597.2	99.6	0	107
pH	4.91	3.93	6.27	9159.4	98.4	0	104

NO0055R Karasjok Norway

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.12	0.01	1.76	35.9	97.8	0	119
Cl-	0.97	0.06	49.74	289.3	97.8	0	119
K+	0.24	0.03	3.90	70.9	97.6	0	118
Mg++	0.064	0.005	2.815	19.1	97.8	1	119
NH4+	0.19	0.01	1.74	57.1	97.6	2	118
NO3-	0.13	0.01	1.26	37.7	97.8	1	119
Na+	0.57	0.04	27.86	170.6	97.8	0	119
Precip	-	0.0	16.9	297.7	100.0	217	365
SO4--	0.26	0.03	2.42	76.1	97.8	0	119
SO4-- corr	0.21	-0.08	2.04	62.3	97.8	0	119
cond	8.98	4.30	49.90	2672.4	91.8	0	83
pH	5.11	4.23	6.16	2296.5	91.9	0	83

NO0099R Lista Norway

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.00	0.10	29.22	1128.7	98.7	0	163
Cl-	32.37	0.56	686.00	36677.3	98.7	0	163
K+	0.80	0.10	15.13	910.9	98.7	0	163
Mg++	2.209	0.048	47.340	2502.8	98.7	0	163
NH4+	0.55	0.01	7.09	628.0	98.7	48	163
NO3-	0.71	0.01	10.97	807.9	98.7	1	163
Na+	18.88	0.40	363.00	21395.7	98.7	0	163
Precip	-	0.0	65.6	1133.0	100.0	185	365
SO4--	2.01	0.30	30.84	2274.0	98.7	0	163
SO4-- corr	0.47	-2.34	4.43	534.1	98.7	0	163
cond	127.00	11.70	1972.00	143888.6	97.5	0	140
pH	4.68	3.35	6.34	23384.8	97.5	0	140

PL0002R Jarczew Poland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.27	0.00	10.30	149.8	98.7	0	130
Cl-	0.46	0.10	7.40	255.6	98.8	0	134
K+	0.11	0.02	2.77	61.4	98.7	0	130
Mg++	0.050	0.004	0.889	27.8	98.7	0	130
NH4+	0.66	0.12	8.86	367.3	98.8	0	134
NO3-	0.44	0.10	8.98	244.5	98.8	0	134
Na+	0.18	0.03	3.81	103.2	98.7	0	130
Precip	-	0.0	28.1	560.4	100.0	205	365
SO4--	0.66	0.13	6.45	369.9	98.8	0	134
SO4-- corr	0.64	0.12	6.34	358.8	98.8	0	134
cond	19.19	4.40	159.10	10755.6	98.8	0	135
pH	4.74	3.71	7.19	10324.4	98.8	0	135

PL0003R Sniezka Poland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.64	0.10	18.60	797.8	99.5	0	208
Cl-	0.63	0.10	15.60	781.7	99.5	0	208
K+	0.22	0.02	4.23	272.7	99.5	0	208
Mg++	0.144	0.012	2.630	179.2	99.5	0	208
NH4+	0.42	0.09	12.31	519.4	99.5	0	208
NO3-	0.87	0.10	13.86	1084.4	99.5	0	208
Na+	0.52	0.04	16.70	650.1	99.5	0	208
Precip	-	0.0	118.3	1243.6	100.0	126	365
SO4--	0.76	0.15	14.56	945.7	99.5	0	208
SO4-- corr	0.71	0.14	13.16	889.5	99.5	0	208
cond	25.49	6.40	348.60	31703.6	99.5	0	209
pH	4.57	3.58	7.65	33345.6	99.5	0	209

PL0004R Leba Poland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.22	0.00	3.30	167.0	98.3	0	138
Cl-	1.14	0.10	27.10	853.4	98.5	0	141
K+	0.09	0.01	2.07	63.8	98.3	0	138
Mg++	0.098	0.009	1.507	73.2	98.3	0	138
NH4+	0.48	0.06	3.73	357.8	98.5	0	141
NO3-	0.44	0.08	3.93	326.7	98.5	0	141
Na+	0.64	0.03	14.64	474.0	98.3	0	138
Precip	-	0.0	51.8	746.0	100.0	183	365
SO4--	0.52	0.13	2.73	390.9	98.5	0	141
SO4-- corr	0.47	0.10	2.58	350.7	98.5	0	141
cond	20.77	6.60	132.30	15493.7	98.5	0	141
pH	4.68	3.85	6.80	15613.8	98.5	0	141

PL0005R Diabla Gora Poland

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.35	0.00	2.20	228.9	95.9	0	116
Cl-	0.53	0.10	11.00	346.1	94.7	0	127
K+	0.11	0.02	1.03	71.3	96.3	0	117
Mg++	0.066	0.001	0.729	42.9	95.2	0	115
NH4+	0.53	0.04	3.65	348.9	95.1	0	130
NO3-	0.44	0.04	3.17	286.9	97.7	0	130
Na+	0.22	0.01	6.24	146.6	95.9	1	116
Precip off	-	0.00	44.80	654.4	100.0	209	365
SO4--	0.58	0.08	5.13	380.2	97.7	0	130
SO4-- corr	0.56	0.07	4.98	364.8	97.7	0	130
cond	16.37	3.00	98.00	10712.8	85.0	0	85
pH	4.78	3.37	7.30	10783.2	98.3	0	146

PT0001R Braganca Portugal

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.63	0.05	17.20	1649.7	77.3	11	46
Cl-	0.84	0.00	3.00	850.1	77.3	1	46
K+	0.05	0.04	0.39	54.4	77.3	40	46
Mg++	0.096	0.015	0.350	97.7	77.3	5	46
NH4+	0.14	0.00	0.76	144.4	77.3	10	51
NO3-	0.15	0.01	0.38	154.0	77.3	3	46
Na+	0.63	0.01	2.11	636.1	77.3	4	46
Precip off	-	0.00	54.70	1014.9	100.0	227	365
SO4--	0.51	0.06	4.29	514.7	77.3	0	46
SO4-- corr	0.46	0.06	4.20	467.4	77.3	0	46
cond	14.44	3.00	94.00	14656.6	77.3	0	46
pH	5.97	5.31	7.46	1074.6	77.3	0	46

PT0003R V. Do Castelo Portugal

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.41	0.05	6.70	711.7	81.9	1	84
Cl-	5.36	0.60	25.10	9262.0	81.9	0	84
K+	0.10	0.04	0.79	168.4	81.9	55	84
Mg++	0.404	0.040	1.870	698.2	81.9	0	84
NH4+	0.10	0.01	0.86	180.9	81.9	21	84
NO3-	0.17	0.01	1.20	300.7	81.9	3	84
Na+	3.53	0.26	19.50	6108.9	81.9	0	84
Precip off	-	0.00	188.00	1729.6	100.0	194	365
SO4--	0.60	0.04	3.27	1037.7	81.9	0	84
SO4-- corr	0.33	-0.09	2.89	564.6	81.9	0	84
cond	28.39	7.00	99.00	49103.2	81.9	0	84
pH	5.33	4.48	7.07	8115.0	81.9	0	84

PT0004R Monte Velho Portugal

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.41	0.05	5.90	284.5	91.8	3	42
Cl-	6.55	0.90	22.70	4550.1	91.8	0	42
K+	0.15	0.04	1.37	103.4	91.8	18	42
Mg++	0.489	0.110	1.720	339.9	91.8	0	42
NH4+	0.10	0.01	2.83	66.6	91.8	22	42
NO3-	0.15	0.01	1.83	103.1	91.8	7	42
Na+	4.36	0.93	16.92	3030.2	91.8	0	42
Precip off	-	0.00	44.60	694.5	100.0	305	365
SO4--	0.76	0.32	5.49	527.9	91.8	0	42
SO4-- corr	0.42	-0.01	4.60	290.3	91.8	0	42
cond	34.39	1.00	135.00	23882.7	91.8	0	42
pH	5.13	4.33	7.02	5164.9	91.8	0	42

RU0001R Janiskoski Russian Federation

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.38	0.04	3.97	147.3	99.5	0	93
Cl-	2.17	0.04	81.00	835.0	100.0	0	94
H+	10.01	0.00	72.00	3852.8	97.2	0	91
K+	0.80	0.00	10.60	307.5	100.0	0	94
Mg++	0.129	0.013	4.953	49.6	99.5	0	93
NH4+	0.27	0.02	2.91	103.8	100.0	0	94
NO3-	0.08	0.01	0.64	30.7	100.0	0	94
Na+	1.52	0.10	44.50	584.4	100.0	0	94
Precip	-	0.0	20.7	384.9	100.0	272	365
SO4--	0.39	0.08	4.20	149.3	100.0	0	94
SO4-- corr	0.28	-0.24	2.91	106.3	100.0	0	94
cond	20.63	4.70	411.90	7939.2	100.0	0	94
pH	5.00	4.14	7.51	3848.1	97.2	0	91

RU0013R Pinega Russian Federation

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.08	0.02	11.04	377.5	99.9	0	111
Cl-	1.12	0.13	11.72	388.8	100.0	0	112
H+	3.89	0.00	120.00	1354.9	98.3	0	94
K+	0.70	0.09	6.00	243.5	99.9	0	111
Mg++	0.218	0.007	3.340	75.8	99.9	0	111
NH4+	0.21	0.02	1.86	73.8	99.9	0	111
NO3-	0.08	0.01	1.08	26.9	100.0	0	112
Na+	0.87	0.12	6.07	303.1	99.9	0	111
Precip	-	0.0	55.0	348.1	100.0	253	365
SO4--	0.40	0.09	4.27	140.0	100.0	0	112
SO4-- corr	0.33	0.03	3.96	114.6	100.0	0	112
cond	16.02	6.20	114.70	5575.3	100.0	0	112
pH	5.42	3.92	7.50	1339.5	98.3	0	94

RU0016R Shepeljovo Russian Federation

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.94	0.03	16.28	446.0	100.0	0	103
Cl-	3.23	0.26	196.80	1525.4	100.0	0	103
H+	12.43	0.00	72.00	5873.2	100.0	0	103
K+	0.56	0.09	10.90	264.6	100.0	0	103
Mg++	0.293	0.020	13.884	138.6	100.0	0	103
NH4+	0.43	0.02	3.95	202.9	100.0	0	103
NO3-	0.40	0.01	3.16	190.9	100.0	0	103
Na+	1.99	0.18	102.43	938.9	100.0	0	103
Precip	-	0.0	22.9	472.4	100.0	262	365
SO4--	0.82	0.19	9.51	387.8	100.0	0	103
SO4-- corr	0.66	-1.95	4.02	309.7	100.0	0	103
cond	31.49	6.60	668.00	14876.4	99.8	0	102
pH	4.91	4.14	7.16	5876.2	100.0	0	103

RU0018R Danki Russian Federation

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.70	0.13	5.81	388.8	99.8	0	126
Cl-	0.32	0.03	4.57	174.3	100.0	0	128
H+	10.47	0.00	148.00	5793.1	98.8	0	118
K+	0.26	0.03	4.32	145.6	97.9	0	127
Mg++	0.084	0.001	1.302	46.2	99.8	0	126
NH4+	0.40	0.02	2.74	223.1	100.0	0	128
NO3-	0.28	0.01	1.77	156.0	100.0	0	128
Na+	0.33	0.04	8.72	182.9	100.0	0	128
Precip	-	0.0	26.6	553.1	100.0	237	365
SO4--	0.48	0.05	3.82	264.2	100.0	0	128
SO4-- corr	0.45	0.03	3.66	249.2	100.0	0	128
cond	14.79	3.70	100.80	8180.6	100.0	0	128
pH	4.98	3.83	7.42	5807.1	98.8	0	118

SE0005R Bredkalen Sweden

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.06	0.01	2.27	22.0	100.0	21	48
Cl-	0.13	0.01	1.74	45.4	100.0	9	48
K+	0.04	0.02	0.41	13.2	100.0	34	48
Mg++	0.016	0.005	0.240	5.5	100.0	23	48
NH4+	0.13	0.01	2.52	44.0	99.7	10	47
NO3-	0.16	0.00	2.04	55.7	100.0	1	48
Na+	0.07	0.03	1.05	23.1	100.0	30	48
Precip	-	0.0	32.9	347.6	100.0	14	62
SO4--	0.20	0.02	2.37	68.5	100.0	0	48
SO4-- corr	0.19	0.02	2.32	66.3	100.0	0	48
cond	8.80	3.00	37.00	3060.7	99.4	0	44
pH	4.89	4.18	6.21	4436.9	100.0	0	48

SE0011R Vavihill Sweden

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.12	0.04	0.42	112.1	100.0	0	12
Cl-	0.83	0.30	1.69	804.6	100.0	0	12
K+	0.09	0.04	0.26	90.1	100.0	0	12
Mg++	0.072	0.020	0.290	69.2	100.0	0	12
NH4+	0.49	0.14	1.92	468.4	100.0	0	12
NO3-	0.47	0.20	1.25	450.5	100.0	0	12
Na+	0.48	0.13	0.99	464.4	100.0	0	12
Precip	-	20.0	153.0	964.0	100.0	0	12
SO4--	0.45	0.21	1.04	436.6	100.0	0	12
SO4-- corr	0.41	0.19	0.98	396.6	100.0	0	12
cond	18.86	10.00	32.00	18179.0	100.0	0	12
pH	4.75	4.56	6.09	17155.4	100.0	0	12

SE0014R Råö Sweden

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.18	0.01	4.03	114.5	98.7	14	136
Cl-	3.55	0.01	99.28	2233.9	98.8	1	139
K+	0.14	0.02	2.34	90.4	98.7	47	136
Mg++	0.247	0.005	6.490	155.5	98.7	9	136
NH4+	0.49	0.01	6.49	305.7	98.6	1	134
NO3-	0.51	0.00	5.99	322.2	98.8	1	139
Na+	2.05	0.03	59.52	1290.2	98.7	18	136
Precip	-	0.0	21.6	628.8	100.0	211	365
SO4--	0.60	0.06	7.20	377.1	98.8	0	139
SO4-- corr	0.43	0.06	6.86	270.1	98.8	0	139
cond	31.89	7.00	369.00	20055.1	96.3	0	111
pH	4.59	3.55	6.64	16103.2	98.9	0	141

SK0002R Chopok Slovakia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.51	0.01	8.78	590.7	92.4	0	172
Cl-	0.34	0.09	4.92	390.4	92.8	0	174
K+	0.25	0.00	1.97	289.1	92.4	2	172
Mg++	0.065	0.007	0.965	75.3	92.4	8	172
NH4+	0.56	0.01	4.11	649.9	92.3	2	171
NO3-	0.40	0.03	4.45	463.5	92.8	0	174
Na+	0.35	0.02	3.53	402.8	92.4	1	172
Precip	-	0.1	52.3	1165.2	100.0	149	365
SO4--	0.99	0.10	11.46	1151.7	92.8	0	172
SO4-- corr	0.96	0.08	11.34	1121.8	92.8	0	172
cond	20.45	4.30	133.20	23833.8	86.2	0	146
pH	4.64	3.91	6.63	26817.7	86.2	0	146

SK0004R Stara Lesna Slovakia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.38	0.01	3.55	335.7	96.0	1	113
Cl-	0.28	0.06	1.95	250.8	96.0	0	114
K+	0.26	0.01	2.87	226.9	96.0	3	113
Mg++	0.048	0.007	0.411	42.7	96.0	4	113
NH4+	0.41	0.01	3.85	359.3	96.0	3	113
NO3-	0.30	0.01	2.90	270.3	96.0	1	114
Na+	0.25	0.02	2.02	224.6	96.0	2	113
Precip	-	0.1	88.1	886.8	100.0	201	365
SO4--	0.76	0.12	4.87	671.8	96.0	0	114
SO4-- corr	0.74	0.10	4.79	654.5	96.0	0	114
cond	15.79	5.10	79.60	14001.4	94.5	0	95
pH	4.80	4.08	6.77	13903.2	94.5	0	95

SK0005R Liesek Slovakia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.59	0.08	30.29	483.3	95.6	0	130
Cl-	0.50	0.12	3.52	411.7	95.1	0	136
K+	0.29	0.03	5.21	240.5	95.6	0	130
Mg++	0.069	0.000	1.091	56.5	95.6	0	130
NH4+	0.40	0.01	1.20	325.0	95.6	1	130
NO3-	0.37	0.03	2.17	302.4	95.1	0	136
Na+	0.42	0.08	9.27	344.1	95.6	0	130
Precip	-	0.1	41.0	821.3	100.0	167	365
SO4--	0.77	0.13	7.36	631.4	95.1	0	136
SO4-- corr	0.74	0.10	7.33	605.0	95.1	0	136
cond	18.27	6.30	65.20	15002.2	90.8	0	97
pH	4.71	4.06	6.49	16115.7	90.8	0	97

SK0006R Starina Slovakia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.75	0.01	3.00	602.4	98.3	2	138
Cl-	0.42	0.09	6.08	341.0	97.6	0	139
K+	0.38	0.01	4.96	303.3	98.3	2	138
Mg++	0.080	0.011	0.410	64.0	98.3	0	138
NH4+	0.43	0.01	2.52	341.4	98.3	1	138
NO3-	0.43	0.01	3.46	347.5	97.6	1	139
Na+	0.46	0.09	3.36	366.8	98.3	0	138
Precip	-	0.1	47.3	801.8	100.0	213	365
SO4--	0.86	0.14	3.86	689.7	97.6	0	139
SO4-- corr	0.83	0.12	3.63	664.1	97.6	0	139
cond	20.47	5.50	78.40	16410.4	93.7	0	105
pH	4.69	4.03	6.77	16487.1	93.7	0	105

SK0007R Topoliniky Slovakia

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.90	0.02	13.05	526.1	95.1	0	98
Cl-	0.49	0.11	6.14	287.4	96.0	0	101
K+	0.22	0.01	2.04	127.0	95.1	5	98
Mg++	0.079	0.007	0.621	46.1	95.1	3	98
NH4+	0.44	0.01	2.73	255.2	95.1	0	98
NO3-	0.39	0.02	2.72	226.9	96.0	0	101
Na+	0.48	0.04	4.14	281.6	95.1	0	98
Precip	-	0.1	27.4	583.4	100.0	256	365
SO4--	0.95	0.11	6.20	557.0	96.0	0	101
SO4-- corr	0.93	0.09	6.11	541.1	96.0	0	101
cond	19.32	4.00	94.60	11272.9	90.6	0	76
pH	4.83	4.16	7.30	8572.9	90.6	0	76

TR0001R Cubuk II Turkey

January 2002 - December 2002

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.75	0.33	8.99	583.6	99.0	0	72
Cl-	0.63	0.10	5.59	208.2	99.9	0	83
K+	0.25	0.05	1.94	82.9	99.0	0	72
Mg++	0.158	0.030	0.810	52.5	99.0	0	72
NH4+	0.48	0.01	2.05	161.3	99.3	0	74
NO3-	0.34	0.07	2.84	113.4	99.9	0	83
Na+	0.55	0.07	5.10	182.6	99.0	0	72
Precip	-	0.1	22.4	332.8	90.1	242	329
SO4--	1.02	0.18	4.07	339.7	99.9	0	83
SO4-- corr	0.97	0.16	3.96	324.5	99.9	0	83
cond	21.97	4.22	94.70	7311.2	98.4	0	67
pH	5.28	4.19	7.47	1761.1	94.3	0	66

Annex 3

Annual statistics on gases and aerosol data

AT0002R Illmitz Austria

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.82	0.46	0.72	1.68	0.06	0.32	0.72	1.67	4.36	99.7	0	364
NH3+NH4+	2.95	1.23	2.70	1.54	0.74	1.33	2.65	5.30	6.27	99.5	0	363
NO2	2.60	1.63	2.19	1.78	0.47	0.93	2.05	5.91	10.67	99.2	0	362
PM10	29.23	17.54	24.74	1.79	11.37	11.62	24.90	63.23	104.18	96.7	0	353
PM25	23.27	15.04	19.14	1.88	3.89	6.76	18.73	55.22	77.62	99.5	0	363
SO2	1.50	1.57	1.03	2.44	0.01	0.31	0.98	4.46	10.92	99.7	0	364
SO4--	1.08	0.68	0.87	1.99	0.06	0.26	0.95	2.38	4.48	99.7	0	364

AT0004R St. Koloman Austria

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.79	1.51	1.33	2.17	0.11	0.36	1.26	4.97	9.25	99.7	0	364
PM10	11.99	9.87	9.26	2.07	1.32	2.64	9.86	28.46	78.79	99.7	0	364

AT0005R Vorhegg Austria

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.96	0.80	0.75	1.99	0.07	0.26	0.70	2.56	6.58	99.5	0	363
PM10	11.16	7.62	8.70	2.15	0.41	2.38	9.66	24.67	47.96	93.2	0	340

AT0030R Pillersdorf Austria

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	1.63	2.65	0.72	3.76	0.00	0.05	0.65	6.64	33.67	95.1	0	8334

BE0001R Offagne Belgium

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.52	3.18	3.73	1.83	0.90	1.50	3.70	11.00	22.90	86.3	0	7557

BE0032R Eupen Belgium

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.86	3.75	3.83	1.96	1.80	1.80	3.70	12.50	42.10	93.5	0	8193

BE0035R Vezin Belgium

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	6.20	3.53	5.26	1.80	0.90	1.80	5.50	13.10	20.10	77.7	0	6808

CH0001G Jungfraujoch Switzerland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.10	0.12	0.07	2.26	0.01	0.02	0.06	0.32	1.05	82.2	0	300
SO2	0.10	0.10	0.08	1.80	0.02	0.04	0.07	0.26	0.82	81.1	0	296
SO4--	0.12	0.15	0.07	3.00	0.01	0.01	0.07	0.35	1.15	99.7	44	364
SPM	3.40	4.54	2.13	2.53	0.50	0.50	2.10	9.57	35.60	94.0	56	343

CH0002R Payerne Switzerland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.36	2.64	3.67	1.79	0.87	1.44	3.48	10.04	14.25	99.7	0	364
PM10	21.12	12.50	18.00	1.77	3.52	7.10	18.20	47.19	71.40	98.6	0	360
PM25	15.89	10.39	13.17	1.85	2.60	4.92	13.20	36.80	64.30	100.0	0	365
SO2	0.48	0.29	0.40	1.83	0.10	0.15	0.41	1.01	1.75	99.7	0	364
SO4--	0.73	0.51	0.58	2.06	0.08	0.15	0.63	1.74	3.82	99.7	0	364

CH0003R Tanikon Switzerland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.29	2.81	3.61	1.77	0.91	1.51	3.39	9.66	18.48	99.7	0	364
PM10	19.64	12.68	16.33	1.85	2.94	5.32	16.89	44.15	78.30	100.0	0	365

CH0004R Chaumont Switzerland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	2.36	1.26	2.09	1.62	0.53	0.96	2.03	5.09	7.65	99.2	0	362
PM10	12.40	8.18	9.87	2.03	1.00	2.90	9.78	28.75	43.90	94.0	0	343
PM25	8.74	5.51	7.12	1.94	1.30	2.40	7.10	18.88	31.00	99.7	0	364
SO2	0.51	0.37	0.39	2.05	0.05	0.12	0.39	1.26	1.94	99.7	0	364

CH0005R Rigi Switzerland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.78	0.71	0.52	2.58	0.03	0.09	0.57	2.13	5.42	100.0	0	365
NH3+NH4+	1.76	1.43	1.21	2.55	0.09	0.26	1.40	4.48	7.25	100.0	0	365
NO2	2.53	1.59	2.18	1.69	0.67	1.02	2.03	5.75	10.90	96.4	0	352
PM10	13.21	9.76	10.12	2.16	0.46	3.04	10.62	32.37	66.68	100.0	0	365
SO2	0.34	0.23	0.28	1.80	0.07	0.12	0.28	0.78	1.71	100.0	0	365
SO4--	0.58	0.41	0.43	2.28	0.03	0.09	0.49	1.43	2.56	99.7	0	364

CS0005R Kamenicki Vis Serbia and Montenegro

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	3.31	1.12	3.13	1.41	1.20	1.70	3.20	5.53	7.70	86.0	0	314
SO2	4.94	3.92	3.70	2.19	1.25	1.25	4.20	13.02	26.50	86.8	88	317

CS0008R Zabljak Serbia and Montenegro

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.28	1.60	4.01	1.45	1.50	2.09	4.00	7.11	11.30	32.3	0	118
SO2	2.14	1.40	1.81	1.72	1.25	1.25	1.25	4.94	7.00	31.8	76	116

CZ0001R Svratouch Czech Republic

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.74	0.46	0.61	1.97	0.10	0.20	0.60	1.80	2.30	97.8	0	357
NH3+NH4+	1.33	1.14	0.84	2.90	0.10	0.10	1.00	3.60	5.00	99.2	0	362
NO2	2.57	1.27	2.27	1.70	0.60	0.60	2.40	4.90	8.80	99.7	0	364
SO2	1.55	1.56	1.05	2.41	0.10	0.30	1.00	4.99	10.80	98.9	0	361
SO4--	1.16	0.75	0.92	2.12	0.11	0.14	0.98	2.49	3.41	16.2	0	59

CZ0003R Kosetice Czech Republic

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.87	0.67	0.70	1.92	0.10	0.20	0.70	2.20	4.20	98.6	0	360
NH3+NH4+	1.67	1.24	1.24	2.31	0.10	0.30	1.40	3.98	7.50	99.7	0	364
NO2	3.11	1.81	2.67	1.75	0.60	1.50	2.40	7.30	10.40	99.5	0	363
PM10	20.74	8.14	19.29	1.49	10.26	10.26	19.04	33.77	34.74	4.1	0	15
SO2	1.15	1.30	0.74	2.49	0.10	0.20	0.70	4.00	8.40	99.2	0	362
SO4--	1.32	0.99	1.00	2.18	0.15	0.24	1.08	2.86	4.65	15.9	0	58

DE0001R Westerland Germany

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.13	0.88	0.84	2.24	0.08	0.21	0.90	2.82	5.44	99.7	2	364
NH3+NH4+	2.18	1.65	1.67	2.13	0.07	0.50	1.69	5.45	9.20	99.7	0	364
NO2	2.26	2.21	1.51	2.59	0.06	0.24	1.65	6.58	13.95	97.8	0	357
PM10	20.17	11.24	17.38	1.75	1.80	6.00	17.00	41.10	67.00	98.1	0	358
SO2	1.33	1.30	0.98	2.24	0.02	0.26	0.96	3.09	14.58	99.7	0	364
SO4--	0.96	0.63	0.76	2.22	0.01	0.24	0.82	2.06	4.19	99.7	2	364

DE0002R Langenbrugge Germany

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	2.24	1.70	1.81	1.89	0.12	0.77	1.65	6.26	10.05	69.0	0	252
PM10	19.49	13.73	16.01	1.86	3.00	6.00	16.00	47.30	110.00	97.0	0	354
PM25	14.85	11.93	11.46	2.06	1.00	4.00	11.00	37.00	96.00	95.9	0	350
SO2	0.80	1.23	0.41	3.31	0.05	0.05	0.45	2.18	8.65	99.7	23	364

DE0003R Schauinsland Germany

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.58	0.47	0.41	2.40	0.03	0.10	0.47	1.48	2.58	96.4	4	352
NH3+NH4+	1.07	0.90	0.66	3.13	0.02	0.07	0.85	2.90	4.34	95.9	1	350
NO2	0.91	0.86	0.70	1.99	0.00	0.24	0.63	2.33	7.65	95.3	0	348
PM10	9.90	8.18	6.91	2.44	1.60	1.70	7.50	26.18	44.60	94.0	0	343
PM25	7.64	6.46	5.45	2.31	1.60	1.70	5.50	19.64	41.90	95.3	0	348
SO2	0.75	0.69	0.50	2.59	0.02	0.10	0.52	2.21	3.96	97.0	0	354
SO4--	0.63	0.52	0.42	2.81	0.01	0.08	0.48	1.65	3.10	97.0	4	354

DE0004R Deuselbach Germany

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.00	0.68	0.82	1.90	0.10	0.26	0.84	2.33	4.17	99.5	1	363
NH3+NH4+	1.85	1.05	1.53	1.96	0.20	0.39	1.73	3.84	5.73	99.2	0	362
NO2	2.46	1.61	2.06	1.83	0.03	0.95	1.95	5.70	9.45	96.7	0	353
PM10	16.01	9.74	13.51	1.83	2.00	5.00	13.00	33.15	70.00	97.8	0	357
PM25	12.30	8.39	9.95	1.97	1.00	3.00	10.00	28.00	59.00	96.7	0	353
SO2	2.17	2.07	1.51	2.43	0.02	0.36	1.54	5.66	19.72	99.5	0	363
SO4--	1.01	0.71	0.79	2.17	0.01	0.24	0.83	2.17	5.64	99.5	2	363

DE0005R Brotjacklriegel Germany

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.55	1.13	1.24	2.00	0.09	0.39	1.29	3.87	9.06	81.9	0	299
PM10	12.30	12.75	8.51	2.48	1.00	1.00	9.00	30.85	170.00	99.5	0	363
SO2	0.99	0.69	0.81	1.86	0.20	0.30	0.75	2.30	4.70	98.6	0	360

DE0007R Neuglobsow Germany

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.85	0.69	0.65	2.08	0.07	0.22	0.61	2.35	4.44	98.4	1	359
NH3+NH4+	1.75	1.38	1.32	2.16	0.11	0.39	1.25	4.62	7.37	97.3	2	355
NO2	2.03	1.72	1.58	1.95	0.42	0.60	1.44	5.46	10.95	97.3	0	355
PM10	16.38	12.38	12.68	2.06	2.00	4.00	12.00	39.00	83.00	98.6	0	360
SO2	1.67	2.42	0.79	3.65	0.02	0.12	0.77	6.41	15.82	98.4	0	359
SO4--	1.10	0.83	0.83	2.27	0.01	0.21	0.84	2.87	5.21	98.4	1	359

DE0008R Schmucke Germany

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.87	1.34	1.53	1.87	0.09	0.56	1.47	4.32	10.11	92.1	0	336
PM10	11.96	9.68	8.40	2.53	0.00	1.00	9.00	32.75	53.00	100.0	0	365
SO2	0.73	0.94	0.39	3.28	0.05	0.05	0.40	2.65	5.95	98.1	30	358

DE0009R Zingst Germany

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.05	0.85	0.79	2.16	0.09	0.22	0.79	2.77	5.89	99.2	3	362
NH3+NH4+	1.91	1.57	1.40	2.29	0.09	0.31	1.52	4.23	10.19	98.9	1	361
NO2	2.21	1.56	1.80	1.91	0.33	0.60	1.73	4.98	10.44	99.5	0	363
PM10	18.84	13.99	15.19	1.93	0.00	5.21	14.60	46.65	117.30	99.2	0	362
SO2	1.64	2.06	1.09	2.40	0.02	0.30	1.01	4.51	17.80	99.5	0	363
SO4--	1.01	0.70	0.80	2.04	0.05	0.25	0.83	2.37	5.02	99.2	0	362

DK0003R Tange Denmark

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.80	0.85	0.55	2.37	0.07	0.14	0.51	2.51	7.17	96.4	0	352
NH3+NH4+	2.45	1.82	1.96	1.95	0.35	0.66	1.88	5.86	11.36	95.3	0	348
Na+	0.90	0.89	0.56	2.77	0.04	0.11	0.53	2.88	4.45	96.2	1	351
SO2	0.28	0.30	0.19	2.41	0.00	0.05	0.18	0.91	2.15	96.7	1	353
SO4--	0.76	0.48	0.63	1.86	0.12	0.23	0.65	1.69	2.75	95.6	0	349
SO4-- corr	0.68	0.50	0.52	2.24	0.01	0.13	0.55	1.67	2.73	95.1	0	347

DK0005R Keldsnor Denmark

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.14	1.18	0.77	2.48	0.02	0.17	0.81	3.26	10.63	98.4	0	359
NH3+NH4+	2.54	2.08	1.95	2.10	0.10	0.50	2.01	5.89	18.32	98.6	0	360
Na+	1.64	1.11	1.26	2.21	0.04	0.28	1.43	3.95	6.14	98.6	1	360
SO2	0.68	0.66	0.47	2.43	0.04	0.10	0.52	1.68	5.73	98.9	0	361
SO4--	0.94	0.51	0.81	1.76	0.20	0.30	0.85	1.99	2.59	97.3	0	355
SO4-- corr	0.81	0.54	0.63	2.21	0.03	0.15	0.71	1.84	2.54	97.0	0	354

DK0008R Anholt Denmark

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.73	0.98	0.45	2.62	0.03	0.10	0.46	2.08	8.95	98.9	0	361
NH3+NH4+	1.22	1.40	0.80	2.46	0.08	0.19	0.81	3.43	11.92	99.2	0	362
Na+	1.14	0.91	0.82	2.38	0.06	0.17	0.80	2.85	4.61	99.2	0	362
SO2	0.48	0.42	0.34	2.39	0.03	0.09	0.34	1.25	3.33	99.5	0	363
SO4--	0.75	0.48	0.63	1.83	0.13	0.23	0.61	1.78	2.59	99.5	0	363

EE0009R Lahemaa Estonia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.48	0.30	0.39	1.95	0.03	0.15	0.41	1.05	1.89	96.7	4	353
SO2	0.73	0.87	0.44	2.71	0.08	0.08	0.47	2.71	5.58	98.1	31	358
SO4--	0.18	0.08	0.17	1.47	0.08	0.08	0.18	0.32	0.53	98.1	17	358

EE0011R Vilsandi Estonia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.70	0.61	0.54	2.08	0.09	0.15	0.52	1.86	6.03	95.6	0	349
SO2	0.39	0.43	0.26	2.42	0.03	0.05	0.25	1.19	3.50	99.5	6	363

ES0007R Viznar Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.47	0.32	0.38	2.01	0.08	0.11	0.39	1.02	2.08	96.2	0	351
NH3+NH4+	0.36	0.41	0.19	3.34	0.02	0.02	0.20	1.31	2.35	97.5	39	356
NO2	2.37	2.28	1.73	2.17	0.03	0.53	1.61	6.81	26.02	97.8	0	8568
PM10	21.40	15.44	16.65	2.09	2.00	5.00	19.00	48.80	127.00	94.2	0	344
PM25	10.31	6.12	8.30	2.04	1.00	2.00	10.00	20.00	33.00	93.4	0	341
SO2	0.43	0.54	0.29	2.27	0.08	0.10	0.25	1.29	10.75	98.1	0	8591
SO4--	1.08	0.76	0.87	1.95	0.17	0.32	0.84	2.43	4.33	96.2	0	351
SPM	38.65	29.08	28.93	2.24	3.00	7.00	34.00	95.20	202.00	95.3	0	348

ES0008R Niembro Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.34	0.20	0.29	1.77	0.01	0.12	0.29	0.71	1.28	96.7	1	353
NH3+NH4+	0.75	0.86	0.43	3.21	0.02	0.02	0.47	2.60	5.63	96.4	19	352
NO2	1.42	1.56	0.85	2.92	0.03	0.14	0.90	4.38	17.44	97.2	0	8517
PM10	18.54	10.08	16.15	1.69	5.00	7.00	16.00	37.70	58.00	94.0	0	343
PM25	10.13	6.91	8.19	1.93	1.00	3.00	8.00	22.00	39.00	91.2	0	333
SO2	2.56	3.31	1.32	3.40	0.08	0.17	1.54	8.50	43.90	95.7	0	8380
SO4--	1.39	1.22	1.11	1.90	0.18	0.42	1.06	3.52	10.54	92.1	0	336
SPM	27.94	13.42	24.90	1.63	6.00	11.00	26.00	52.00	74.00	91.0	0	332

ES0009R Campisabalos Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.18	0.07	0.17	1.42	0.07	0.10	0.16	0.33	0.49	98.1	0	358
NH3+NH4+	0.12	0.08	0.10	1.92	0.02	0.03	0.11	0.26	0.66	98.9	16	361
NO2	0.92	0.66	0.78	1.76	0.04	0.31	0.78	1.95	13.27	95.2	0	8336
PM10	10.80	9.12	8.16	2.11	1.00	2.00	8.00	28.15	62.00	86.8	0	317
PM25	6.98	4.22	5.77	1.90	1.00	2.00	6.00	15.00	22.00	78.9	0	288
SO2	0.39	0.59	0.24	2.40	0.08	0.09	0.19	1.31	10.15	96.8	0	8479
SO4--	0.67	0.44	0.54	1.94	0.10	0.18	0.53	1.56	2.24	98.4	0	359
SPM	17.23	17.18	11.49	2.50	1.00	2.00	12.00	51.00	109.00	87.7	0	320

ES0010R Cabo de Creus Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.13	0.08	0.12	1.50	0.01	0.08	0.12	0.20	1.17	91.2	3	333
NH3+NH4+	1.32	0.90	0.92	2.75	0.02	0.13	1.21	2.81	5.83	89.0	3	325
NO2	1.28	1.21	0.88	2.59	0.03	0.14	0.97	3.44	14.67	96.4	0	8443
PM10	18.90	6.51	17.92	1.38	7.00	10.00	18.00	29.00	55.00	89.6	0	327
PM25	12.90	6.01	11.68	1.57	4.00	5.00	12.00	23.00	52.00	91.0	0	332
SO2	0.38	0.35	0.29	1.93	0.08	0.12	0.27	0.94	5.20	96.7	0	8470
SO4--	1.28	0.65	1.14	1.63	0.32	0.53	1.15	2.54	4.63	92.6	0	338
SPM	35.47	16.50	32.45	1.51	11.00	17.00	31.00	70.00	114.00	91.8	0	335

ES0011R Barcarrola Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.17	0.07	0.16	1.51	0.01	0.09	0.15	0.31	0.44	99.5	2	363
NH3+NH4+	0.37	0.37	0.24	2.60	0.02	0.05	0.22	1.16	2.13	99.7	7	364
NO2	0.81	1.10	0.45	3.29	0.03	0.04	0.53	2.40	17.38	97.0	0	8498
PM10	15.95	9.70	13.26	1.87	2.00	5.00	13.00	37.00	47.00	93.7	0	342
PM25	12.45	9.15	9.14	2.34	1.00	2.00	10.00	30.00	42.00	91.0	0	332
SO2	0.69	1.09	0.38	2.80	0.08	0.10	0.32	2.34	18.05	97.9	0	8580
SO4--	0.85	0.70	0.67	1.94	0.16	0.26	0.58	2.20	5.97	98.1	0	358
SPM	24.91	15.71	20.30	1.94	3.00	7.00	21.00	54.00	73.00	95.1	0	347

ES0012R Zarra Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.43	0.22	0.38	1.65	0.10	0.16	0.40	0.83	1.64	93.7	0	342
NH3+NH4+	1.69	1.14	1.04	3.94	0.02	0.02	1.60	3.63	6.60	95.3	26	348
NO2	1.20	0.92	0.93	2.17	0.03	0.27	0.99	2.82	11.32	97.2	0	8515
PM10	14.64	9.18	12.19	1.88	2.00	4.00	13.00	29.00	93.00	94.0	0	343
PM25	8.15	4.43	6.86	1.88	1.00	2.00	7.00	16.00	23.00	95.6	0	349
SO2	0.63	0.68	0.45	2.33	0.08	0.11	0.46	1.82	23.90	97.8	0	8571
SO4--	0.98	0.61	0.80	1.92	0.16	0.26	0.77	2.15	3.12	95.6	0	349
SPM	21.36	14.44	17.33	1.97	2.00	5.00	19.00	44.00	153.00	93.4	0	341

ES0013R Penausende Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.12	0.04	0.11	1.62	0.01	0.07	0.11	0.18	0.32	98.6	10	360
NH3+NH4+	0.92	0.61	0.65	2.67	0.03	0.08	0.85	1.93	3.92	99.2	0	362
NO2	0.96	0.90	0.69	2.29	0.03	0.17	0.70	2.54	13.73	95.9	0	8401
PM10	12.28	9.10	9.69	2.00	1.00	3.00	10.00	31.45	62.00	90.7	0	331
PM25	8.02	5.89	6.19	2.11	1.00	2.00	6.00	19.00	40.00	89.3	0	326
SO2	0.68	0.96	0.45	2.20	0.08	0.18	0.37	2.11	26.65	98.4	0	8621
SO4--	0.72	0.53	0.57	1.97	0.14	0.20	0.56	1.76	2.94	96.2	0	351
SPM	17.73	13.52	13.54	2.12	2.00	4.00	14.00	45.90	72.00	93.7	0	342

ES0014R Els Torms Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.55	0.38	0.43	2.15	0.01	0.10	0.48	1.26	2.51	95.6	2	349
NH3+NH4+	0.59	0.37	0.47	2.20	0.02	0.09	0.54	1.25	2.00	95.6	3	349
NO2	1.64	1.11	1.33	1.96	0.03	0.44	1.40	3.65	14.43	98.7	0	8643
PM10	15.38	7.11	13.79	1.62	2.00	6.00	14.00	27.20	51.00	92.1	0	336
PM25	10.64	5.51	9.26	1.73	2.00	3.00	10.00	20.00	36.00	89.6	0	327
SO2	0.69	1.09	0.46	2.22	0.08	0.15	0.42	2.00	50.00	98.5	0	8627
SO4--	1.08	0.63	0.91	1.82	0.18	0.34	0.97	2.27	4.09	90.4	0	330
SPM	23.38	10.17	21.19	1.59	4.00	9.00	22.00	42.00	60.00	87.9	0	321

ES0015R Risco Llano Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.38	0.22	0.31	1.89	0.01	0.12	0.33	0.75	1.49	93.4	2	341
NH3+NH4+	0.70	0.55	0.49	2.46	0.02	0.11	0.52	1.79	2.62	86.0	2	314
NO2	0.74	0.73	0.56	2.11	0.03	0.18	0.54	1.94	11.66	96.8	0	8483
PM10	12.27	10.92	8.63	2.45	1.00	1.00	10.00	29.00	86.00	91.2	0	333
PM25	6.70	4.61	5.07	2.25	1.00	1.00	6.00	15.00	25.00	82.5	0	301
SO2	0.61	0.94	0.39	2.30	0.08	0.14	0.33	1.89	15.40	97.2	0	8516
SO4--	0.76	0.52	0.62	1.89	0.11	0.23	0.58	1.77	3.28	75.9	0	277
SPM	22.93	20.43	16.87	2.22	2.00	4.00	17.50	60.15	135.00	59.5	0	217

ES0016R O Saviñao Spain

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.30	0.19	0.26	1.75	0.01	0.11	0.25	0.69	1.13	95.9	1	350
NH3+NH4+	0.92	0.84	0.59	2.87	0.02	0.06	0.61	2.65	6.29	92.9	5	339
NO2	1.21	0.79	0.98	2.00	0.03	0.31	1.02	2.72	6.88	91.7	0	8036
PM10	13.85	10.68	11.23	1.88	2.00	4.00	10.00	32.00	88.00	90.7	0	331
PM25	9.43	8.06	6.95	2.21	1.00	2.00	7.00	24.00	70.00	92.1	0	336
SO2	1.46	3.72	0.57	3.47	0.08	0.11	0.49	5.15	81.50	93.5	0	8191
SO4--	1.22	1.11	0.87	2.25	0.12	0.25	0.84	3.48	7.85	91.5	0	334
SPM	20.02	15.08	16.27	1.89	3.00	6.00	16.00	41.35	121.00	85.8	0	313

FI0009R Uto Finland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.45	0.35	0.34	2.10	0.05	0.09	0.36	1.00	2.65	97.8	0	357
NH3+NH4+	0.55	0.62	0.35	2.53	0.03	0.08	0.35	1.77	3.98	99.7	0	364
NO2	1.17	1.01	0.84	2.33	-0.21	0.20	0.87	3.17	10.16	90.1	0	7895
SO2	0.52	0.40	0.41	1.99	0.03	0.15	0.39	1.32	2.50	98.1	0	358
SO4--	0.66	0.48	0.50	2.31	0.00	0.14	0.54	1.72	2.67	97.8	0	357

FI0017R Virolahti II Finland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.30	0.28	0.22	2.26	0.02	0.05	0.23	0.72	3.10	100.0	0	365
NH3+NH4+	0.71	0.63	0.50	2.30	0.06	0.13	0.50	2.00	4.04	100.0	0	365
NO2	1.65	1.72	1.10	2.58	-0.10	0.21	1.13	4.56	27.21	95.8	0	8394
PM10	9.96	8.20	6.71	3.13	0.10	0.45	7.33	20.87	37.65	6.8	0	25
SO2	0.73	0.77	0.47	2.70	0.01	0.08	0.49	2.12	7.66	100.0	0	365
SO4--	0.63	0.46	0.49	2.15	0.00	0.13	0.52	1.39	3.47	100.0	0	365

FI0022R Oulanka Finland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.06	0.07	0.04	2.44	0.00	0.01	0.05	0.17	0.60	100.0	0	365
NH3+NH4+	0.17	0.23	0.09	2.96	0.00	0.01	0.08	0.68	1.48	99.5	0	363
NO2	0.29	0.30	0.19	2.62	-0.03	0.03	0.20	0.82	3.11	98.5	0	8628
SO2	0.40	0.66	0.15	4.11	0.01	0.01	0.16	1.83	4.95	100.0	0	365
SO4--	0.36	0.27	0.26	2.34	0.00	0.07	0.29	0.88	1.66	100.0	0	365

FI0037R Ahtari II Finland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.18	0.14	0.14	2.12	0.01	0.03	0.15	0.41	0.98	98.1	0	358
NH3+NH4+	0.37	0.33	0.27	2.28	0.01	0.07	0.27	1.03	1.97	99.5	0	363
NO2	0.64	0.61	0.44	2.50	-0.07	0.09	0.45	1.76	6.22	74.0	0	6486
SO2	0.34	0.40	0.21	2.62	0.01	0.05	0.21	1.15	2.53	100.0	0	365
SO4--	0.46	0.34	0.34	2.32	0.00	0.09	0.38	1.15	2.10	98.1	0	358

FR0003R La Crouzille France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.59	1.18	0.34	2.29	0.14	0.15	0.24	1.20	9.21	49.6	94	181
SO4--	0.61	0.45	0.49	1.94	0.06	0.17	0.48	1.47	2.75	49.3	1	180

FR0005R La Hague France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.55	0.55	0.39	2.20	0.17	0.18	0.24	1.64	4.16	99.7	188	364
SO4--	0.61	0.38	0.53	1.69	0.14	0.24	0.49	1.36	2.44	95.3	0	348

FR0008R Donon France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.48	0.47	0.34	2.16	0.16	0.17	0.21	1.53	2.60	97.0	209	354
SO4--	0.55	0.39	0.43	2.12	0.04	0.13	0.46	1.27	2.36	95.9	11	350

FR0009R Revin France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.67	0.76	0.43	2.46	0.12	0.15	0.41	2.03	5.66	100.0	163	365
SO4--	0.77	0.54	0.62	1.94	0.05	0.21	0.60	1.74	3.23	99.7	1	364

FR0010R Morvan France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.37	0.35	0.29	1.88	0.12	0.18	0.20	1.13	2.15	99.7	248	364
SO4--	0.45	0.34	0.35	2.06	0.04	0.11	0.34	1.09	2.18	99.7	7	364

FR0012R Iraty France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.43	0.46	0.31	2.03	0.14	0.17	0.21	1.54	3.43	95.6	232	349
SO4--	0.76	1.09	0.43	2.91	0.04	0.05	0.41	2.54	9.64	96.2	29	351

FR0013R Peyrusse Vieille France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.38	0.30	0.30	1.96	0.12	0.14	0.19	1.07	1.67	98.1	201	358
SO4--	0.46	0.31	0.38	1.83	0.10	0.15	0.36	1.13	1.88	94.5	0	345

FR0014R Montandon France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.25	0.17	0.21	1.59	0.15	0.16	0.17	0.63	1.09	89.0	263	325
SO4--	0.46	0.32	0.36	2.16	0.04	0.10	0.37	1.00	1.88	88.5	12	323

FR0015R La Tardière France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.29	0.21	0.24	1.78	0.12	0.14	0.17	0.71	1.31	99.5	231	363
SO4--	0.69	0.47	0.57	1.84	0.14	0.21	0.54	1.53	2.91	98.9	0	361

FR0016R Le Casset France

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.23	0.33	0.20	1.53	0.12	0.14	0.17	0.46	5.87	94.2	300	344
SO4--	0.36	0.28	0.25	2.46	0.04	0.04	0.29	0.87	1.66	94.0	40	343

GB0002R Eskdalemuir United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.24	0.14	0.18	2.05	0.05	0.05	0.21	0.49	0.55	95.9	0	24

GB0006R Lough Navar United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.11	0.09	0.09	1.89	0.03	0.03	0.08	0.23	0.42	99.5	0	26

GB0013R Yarner Wood United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.30	0.24	0.23	2.32	0.04	0.05	0.18	0.75	0.80	92.0	0	23

GB0014R High Muffles United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	1.54	1.63	1.18	1.96	0.43	0.45	1.04	2.57	8.74	95.9	0	25

GB0015R Strathvaich Dam United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.10	0.15	0.07	2.51	0.02	0.02	0.06	0.43	0.64	99.7	0	26

GB0036R Harwell United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.47	4.12	3.10	2.40	0.00	0.58	2.91	13.97	27.35	97.8	0	8569

GB0037R Ladybower United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	3.94	3.74	2.79	2.45	0.00	0.58	2.91	12.22	24.44	97.4	0	8536

GB0038R Lullington Heath United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	3.30	2.88	2.49	2.17	0.00	0.58	2.33	9.31	30.85	91.1	0	7979

GB0043R Narberth United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	2.12	1.97	1.63	2.11	0.00	0.58	1.75	6.40	13.97	85.7	0	7509

GB0045R Wicken Fen United Kingdom

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	3.53	2.90	2.63	2.22	0.00	0.58	2.33	9.89	19.21	85.0	0	7444

HU0002R K-Puszta Hungary

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.18	0.15	0.13	2.40	0.01	0.03	0.13	0.43	1.14	86.0	2	314
NH3	1.50	0.93	1.11	2.61	0.02	0.20	1.44	3.02	4.70	94.2	5	344
NH4+	1.50	1.19	1.12	2.25	0.01	0.33	1.19	4.21	7.89	94.0	1	343
NO2	1.67	0.95	1.48	1.60	0.44	0.75	1.45	3.58	7.85	89.0	1	325
NO3-	0.62	0.68	0.39	2.62	0.01	0.09	0.35	1.97	5.55	86.0	0	314
SO2	2.46	2.34	1.61	2.81	0.01	0.29	1.82	7.19	13.79	81.1	1	296
SO4--	1.45	0.95	1.13	2.16	0.03	0.31	1.24	3.49	4.70	86.0	0	314

IE0001R Valentia Obs. Ireland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.62	0.81	0.39	2.58	0.05	0.10	0.40	1.90	8.00	100.0	15	365
SO2	0.29	0.44	0.15	3.17	0.01	0.01	0.13	1.14	4.06	97.5	18	356
SO4--	0.55	0.38	0.43	2.20	0.01	0.18	0.44	1.38	2.72	99.2	7	362

IE0002R Turlough Hill Ireland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.04	0.06	0.03	2.38	0.00	0.00	0.03	0.12	0.46	85.8	0	313
SO4--	0.34	0.31	0.24	2.30	0.00	0.06	0.23	1.04	1.58	85.8	0	313

IE0003R The Burren Ireland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO4--	0.26	0.31	0.16	2.71	0.01	0.04	0.15	0.84	2.06	91.5	0	334

IE0031R Mace Head Ireland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
PM10	13.18	7.05	11.35	1.78	3.88	4.21	12.39	23.79	29.16	7.4	0	27

IT0001R Montelibretti Italy

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.14	0.14	0.10	2.47	0.00	0.02	0.10	0.42	0.76	100.0	0	365
NH3	1.82	0.90	1.59	1.87	0.00	0.40	1.84	3.16	6.88	100.0	0	365
NH4+	1.83	0.84	1.61	1.79	0.02	0.56	1.76	3.23	5.28	100.0	0	365
NO2	5.61	2.42	5.11	1.56	0.69	2.36	5.21	9.97	13.97	94.2	0	344
NO3-	0.50	0.45	0.35	2.42	0.00	0.09	0.35	1.42	3.01	98.9	0	361
PM10	33.22	15.12	30.28	1.55	7.10	13.89	31.00	55.52	150.00	92.6	0	338
SO2	0.61	0.43	0.49	2.04	-0.05	0.15	0.49	1.49	2.90	99.7	0	364
SO4--	1.02	0.71	0.79	2.25	0.00	0.17	0.92	2.15	3.87	100.0	0	365

IT0004R Ispra Italy

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	2.23	1.77	1.44	3.27	-0.01	0.09	1.75	5.77	7.51	57.8	0	211
NO2	10.10	12.21	6.41	2.38	1.28	2.33	5.00	39.16	64.04	80.5	0	294
NO3-	0.65	0.51	0.43	3.13	0.00	0.03	0.51	1.68	2.18	57.8	0	211
PM10	35.45	25.28	26.98	2.25	5.39	6.38	27.71	85.43	142.83	81.6	0	298
PM25	29.39	22.29	21.43	2.38	1.40	4.11	22.77	76.20	108.75	57.0	0	208
SO2	0.88	0.87	0.53	2.84	0.13	0.13	0.40	2.66	4.26	92.3	0	337
SO4--	0.96	0.76	0.62	3.23	0.00	0.04	0.76	2.48	3.22	57.8	0	211

LT0015R Preila Lithuania

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.78	0.86	0.57	2.14	0.08	0.15	0.59	1.91	8.61	95.9	0	350
NH3+NH4+	1.69	1.15	1.35	2.01	0.10	0.40	1.40	3.74	8.54	95.9	0	350
NO2	1.29	0.77	1.12	1.72	0.05	0.50	1.09	2.77	5.66	95.6	0	349
SO2	1.23	1.71	0.75	2.56	0.01	0.20	0.66	4.42	14.20	95.6	0	349
SO4--	1.24	0.74	1.09	1.64	0.26	0.54	1.10	2.38	7.42	95.9	0	350

LV0010R Rucava Latvia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.50	0.55	0.33	2.52	0.02	0.07	0.32	1.44	4.87	99.7	0	364
NH3+NH4+	1.54	1.42	1.13	2.23	0.04	0.28	1.20	3.55	11.81	99.7	0	364
NH4+	0.99	0.76	0.73	2.42	0.01	0.18	0.85	2.35	5.57	98.6	7	360
NO2	0.68	0.62	0.49	2.33	0.02	0.12	0.53	1.86	4.57	99.5	10	363
NO3-	0.12	0.20	0.07	2.69	0.01	0.02	0.06	0.47	1.23	99.7	1	364
SO2	0.61	0.72	0.36	2.95	0.01	0.07	0.36	1.72	5.18	95.3	41	348
SO4--	0.83	0.72	0.62	2.17	0.02	0.16	0.65	2.35	6.66	99.2	5	362

LV0016R Zoseni Latvia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.29	0.34	0.20	2.28	0.02	0.05	0.20	0.76	3.98	98.9	0	361
NH3+NH4+	1.44	1.74	0.99	2.32	0.02	0.26	0.99	3.61	19.60	98.9	0	361
NH4+	0.77	0.70	0.54	2.43	0.02	0.11	0.59	2.09	7.16	99.2	18	362
NO2	0.69	0.48	0.57	1.88	0.02	0.22	0.56	1.45	4.15	99.2	6	362
NO3-	0.08	0.15	0.04	2.76	0.01	0.01	0.03	0.33	1.15	99.2	20	362
SO2	0.57	0.59	0.40	2.23	0.04	0.11	0.39	1.51	4.67	94.0	12	343
SO4--	0.45	0.39	0.32	2.49	0.01	0.08	0.36	1.23	2.34	99.2	29	362

NL0009R Kollumerwaard Netherlands

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.10	0.07	0.08	2.04	-0.01	0.02	0.08	0.24	0.58	49.3	0	180
NH4+	1.26	0.95	0.94	2.24	-0.02	0.24	0.99	3.15	5.73	93.2	0	340
NO2	3.74	3.25	2.86	2.55	-0.16	0.91	2.74	10.95	18.49	93.1	0	7997
NO3-	0.70	0.64	0.62	2.13	-0.01	0.00	0.56	2.02	3.19	93.2	0	340
PM10	22.89	11.64	19.81	1.79	5.27	5.39	19.78	43.55	45.78	6.6	0	24
SO2	0.66	0.90	0.75	3.23	-0.79	-0.19	0.50	2.26	19.15	100.0	6	8713
SO4--	0.79	0.54	0.63	1.99	0.12	0.13	0.64	1.67	3.96	93.2	0	340

NL0010R Vreedepeel Netherlands

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH3	11.86	9.16	9.86	2.06	1.28	3.34	10.53	29.60	117.59	80.3	0	6781
NH4+	1.60	1.29	1.23	2.09	0.09	0.39	1.26	3.77	10.25	99.5	0	363
NO2	6.33	4.01	5.59	1.95	1.22	2.44	5.79	14.33	25.56	95.6	0	8110
NO3-	0.93	0.77	0.75	2.13	0.00	0.02	0.78	2.23	5.54	99.5	0	363
SO2	1.05	1.52	1.04	3.25	-0.87	-0.21	1.00	3.89	14.89	87.4	0	7606
SO4--	0.95	0.76	0.75	2.03	-0.01	0.23	0.74	2.39	6.78	99.5	0	363

NO0001R Birkenes Norway

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.06	0.08	0.03	3.32	0.01	0.01	0.03	0.21	0.53	99.2	74	362
Cl-	0.34	0.68	0.07	6.05	0.01	0.01	0.06	1.46	5.36	92.6	107	338
HNO3	0.07	0.09	0.04	3.08	0.01	0.01	0.04	0.24	0.70	91.0	114	332
HNO3+NO3-	0.27	0.47	0.14	2.75	0.00	0.03	0.13	1.01	4.62	90.4	4	330
K+	0.06	0.07	0.03	3.00	0.01	0.01	0.04	0.17	0.85	99.2	50	362
Mg++	0.044	0.058	0.022	3.333	0.005	0.005	0.020	0.150	0.390	99.2	101	362
NH3	0.22	0.20	0.17	2.17	0.02	0.05	0.17	0.57	2.03	91.0	13	332
NH3+NH4+	0.62	0.73	0.38	2.67	0.03	0.08	0.36	2.08	5.94	90.7	0	331
NH4+	0.40	0.67	0.12	6.28	0.01	0.01	0.18	1.58	5.50	90.7	56	331
NO2	0.45	0.47	0.31	2.52	0.01	0.07	0.35	1.18	3.95	98.1	7	358
NO3-	0.19	0.42	0.08	3.51	0.01	0.01	0.08	0.83	4.54	90.4	13	330
Na+	0.35	0.49	0.15	4.10	0.01	0.01	0.16	1.23	3.49	99.2	15	362
PM10	7.43	6.69	5.27	2.63	0.42	0.95	5.25	24.37	34.05	93.7	14	342
PM10-PM25	2.27	2.27	1.24	3.66	0.02	0.10	1.70	6.28	17.99	97.5	57	356
PM25	5.75	5.52	4.46	3.22	1.00	1.46	4.30	18.72	31.77	96.8	15	342
SO2	0.15	0.13	0.12	2.06	0.01	0.04	0.11	0.37	1.33	99.5	5	363
SO4--	0.50	0.48	0.31	2.78	0.01	0.06	0.35	1.58	2.38	98.1	0	358
SO4-- corr	0.47	0.48	0.27	3.16	-0.00	0.03	0.32	1.57	2.31	98.1	0	358

NO0008R Skreaadalen Norway

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.07	0.10	0.03	3.20	0.01	0.01	0.03	0.21	1.34	97.5	48	356
Cl-	0.40	0.82	0.09	6.24	0.01	0.01	0.09	1.67	7.18	95.3	100	348
HNO3	0.05	0.07	0.03	2.77	0.01	0.01	0.03	0.18	0.67	91.0	143	332
HNO3+NO3-	0.26	0.49	0.13	2.99	0.00	0.02	0.11	1.11	4.86	88.2	5	322
K+	0.06	0.06	0.04	2.56	0.01	0.01	0.04	0.18	0.48	97.5	28	356
Mg++	0.044	0.062	0.021	3.392	0.005	0.005	0.020	0.161	0.500	97.8	112	357
NH3	0.81	0.50	0.61	2.53	0.02	0.09	0.76	1.65	3.35	90.7	9	331
NH3+NH4+	1.21	0.95	0.92	2.19	0.03	0.25	0.98	2.80	7.22	89.0	0	325
NH4+	0.40	0.72	0.10	6.81	0.01	0.01	0.13	1.62	5.89	89.3	63	326
NO2	0.39	0.35	0.29	2.13	0.01	0.09	0.30	0.95	3.46	97.3	3	355
NO3-	0.21	0.47	0.08	3.85	0.01	0.01	0.07	0.93	4.76	88.2	22	322
Na+	0.35	0.53	0.14	4.55	0.01	0.01	0.16	1.35	4.45	97.8	24	357
SO2	0.11	0.13	0.08	2.10	0.01	0.03	0.07	0.30	1.02	99.5	12	363
SO4--	0.39	0.42	0.22	3.33	0.01	0.04	0.23	1.31	2.72	98.6	11	360
SO4-- corr	0.36	0.43	0.18	4.14	-0.04	0.01	0.20	1.30	2.72	98.6	11	360

NO0015R Tustervatn Norway

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.04	0.04	0.02	2.85	0.01	0.01	0.02	0.12	0.25	99.7	83	364
Cl-	0.36	0.68	0.08	6.33	0.01	0.01	0.08	1.59	5.71	95.3	114	348
HNO3	0.04	0.04	0.02	2.56	0.01	0.01	0.01	0.15	0.24	66.6	167	243
HNO3+NO3-	0.10	0.16	0.07	2.30	0.00	0.01	0.07	0.29	1.52	63.6	11	232
K+	0.03	0.03	0.02	2.52	0.01	0.01	0.02	0.07	0.22	99.7	101	364
Mg++	0.035	0.056	0.017	3.180	0.005	0.005	0.020	0.137	0.570	100.0	134	365
NH3	0.71	0.59	0.47	2.78	0.02	0.08	0.53	1.69	3.70	66.6	2	243
NH3+NH4+	0.83	0.65	0.59	2.37	0.05	0.15	0.59	1.92	3.88	66.6	0	243
NH4+	0.11	0.18	0.04	4.75	0.01	0.01	0.06	0.43	1.29	67.1	79	245
NO2	0.18	0.17	0.11	3.03	0.01	0.01	0.12	0.52	0.95	99.7	54	364
NO3-	0.07	0.12	0.04	2.89	0.01	0.01	0.04	0.20	1.28	63.8	23	233
Na+	0.28	0.41	0.12	4.11	0.01	0.01	0.13	1.11	3.50	100.0	20	365
SO2	0.09	0.09	0.07	1.84	0.01	0.04	0.07	0.21	0.91	99.5	7	363
SO4--	0.21	0.21	0.14	2.48	0.01	0.03	0.14	0.61	1.73	98.9	2	361
SO4-- corr	0.18	0.21	0.11	2.92	0.00	0.02	0.11	0.61	1.73	98.9	2	361

NO0039R Kaarvatn Norway

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.03	0.04	0.02	2.83	0.01	0.01	0.02	0.11	0.46	98.1	106	358
Cl-	0.18	0.31	0.05	5.22	0.01	0.01	0.03	0.76	2.41	89.3	143	326
HNO3	0.03	0.03	0.02	2.33	0.01	0.01	0.01	0.09	0.24	88.2	191	322
HNO3+NO3-	0.09	0.13	0.06	2.20	0.00	0.02	0.06	0.24	1.67	85.2	1	311
K+	0.03	0.02	0.02	2.36	0.01	0.01	0.02	0.08	0.17	98.1	68	358
Mg++	0.020	0.029	0.011	2.705	0.005	0.005	0.005	0.070	0.320	98.1	187	358
NH3	0.44	0.37	0.32	2.27	0.02	0.10	0.31	1.12	3.20	80.8	5	295
NH3+NH4+	0.79	1.02	0.49	2.53	0.03	0.13	0.46	2.77	6.48	88.2	0	322
NH4+	0.13	0.19	0.04	5.21	0.01	0.01	0.05	0.53	1.72	88.2	88	322
NO2	0.26	0.18	0.19	2.37	0.01	0.04	0.22	0.54	1.21	99.5	14	363
NO3-	0.06	0.11	0.03	2.77	0.01	0.01	0.04	0.16	1.54	85.2	30	311
Na+	0.16	0.21	0.07	4.13	0.01	0.01	0.07	0.53	1.72	98.1	38	358
SO2	0.07	0.04	0.06	1.58	0.01	0.04	0.06	0.13	0.55	98.1	4	358
SO4--	0.20	0.21	0.13	2.79	0.01	0.02	0.13	0.69	1.11	98.1	1	358
SO4-- corr	0.19	0.21	0.11	3.19	-0.01	0.02	0.11	0.69	1.11	98.1	1	358

NO0041R Osen Norway

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.03	0.04	0.02	2.85	0.01	0.01	0.02	0.10	0.31	98.9	103	361
Cl-	0.06	0.13	0.02	3.44	0.01	0.01	0.01	0.33	1.10	88.8	205	324
HNO3	0.05	0.05	0.03	2.76	0.01	0.01	0.03	0.17	0.33	96.4	160	352
HNO3+NO3-	0.12	0.20	0.08	2.45	0.00	0.02	0.07	0.38	2.44	95.3	10	348
K+	0.04	0.11	0.03	2.73	0.01	0.01	0.03	0.11	1.54	98.6	56	360
Mg++	0.011	0.012	0.008	2.071	0.005	0.005	0.005	0.040	0.090	98.9	239	361
NH3	0.33	0.45	0.21	2.51	0.02	0.05	0.21	0.95	4.32	96.4	15	352
NH3+NH4+	0.52	0.60	0.35	2.37	0.03	0.11	0.30	1.69	4.95	95.6	0	349
NH4+	0.19	0.33	0.07	4.74	0.01	0.01	0.10	0.66	3.74	95.9	56	350
NO2	0.38	0.51	0.28	2.19	0.01	0.09	0.28	0.94	7.96	92.1	4	336
NO3-	0.08	0.17	0.04	3.11	0.01	0.01	0.04	0.23	2.32	95.6	35	349
Na+	0.09	0.11	0.05	3.06	0.01	0.01	0.05	0.32	0.79	98.9	22	361
SO2	0.07	0.05	0.06	1.84	0.01	0.02	0.06	0.16	0.41	98.9	15	361
SO4--	0.27	0.32	0.16	3.10	0.01	0.02	0.17	0.93	2.53	98.9	2	361
SO4-- corr	0.27	0.32	0.14	3.33	0.00	0.02	0.16	0.93	2.52	98.9	2	361

NO0042G Zeppelin, Spitsbergen Norway

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.04	0.06	0.02	2.96	0.01	0.01	0.02	0.13	0.62	96.4	88	352
Cl-	0.34	0.60	0.12	4.88	0.01	0.01	0.15	1.21	6.47	96.7	70	353
HNO3	0.03	0.04	0.02	2.08	0.01	0.01	0.01	0.09	0.34	68.5	243	250
HNO3+NO3-	0.05	0.05	0.04	2.04	0.00	0.01	0.03	0.14	0.39	56.7	7	207
K+	0.03	0.08	0.01	2.80	0.01	0.01	0.01	0.07	0.80	96.2	134	351
Mg++	0.039	0.053	0.021	3.093	0.005	0.005	0.020	0.120	0.500	96.4	100	352
NH3	0.21	0.11	0.19	1.72	0.02	0.08	0.19	0.40	0.75	68.5	5	250
NH3+NH4+	0.23	0.11	0.21	1.57	0.02	0.11	0.21	0.44	0.75	67.7	0	247
NH4+	0.02	0.03	0.01	2.83	0.01	0.01	0.01	0.07	0.19	67.7	167	247
NO3-	0.02	0.03	0.01	2.53	0.01	0.01	0.01	0.05	0.31	56.7	89	207
Na+	0.28	0.45	0.13	3.85	0.01	0.01	0.17	0.84	4.29	96.4	22	352
SO2	0.16	0.25	0.10	2.12	0.01	0.05	0.09	0.50	2.11	97.3	2	355
SO4--	0.14	0.12	0.09	2.98	0.01	0.01	0.10	0.37	0.70	96.2	18	351
SO4-- corr	0.11	0.11	0.07	3.67	-0.01	0.00	0.08	0.32	0.69	96.2	18	351

NO0055R Karasjok Norway

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.02	0.03	0.02	2.48	0.01	0.01	0.02	0.07	0.24	99.7	93	364
Cl-	0.32	0.55	0.09	5.64	0.01	0.01	0.11	1.33	4.40	96.2	97	351
HNO3	0.02	0.03	0.02	2.07	0.01	0.01	0.01	0.06	0.42	92.1	236	336
HNO3+NO3-	0.07	0.07	0.05	2.01	0.00	0.02	0.05	0.18	0.53	82.7	3	302
K+	0.03	0.03	0.02	2.58	0.01	0.01	0.02	0.08	0.25	99.5	90	363
Mg++	0.030	0.041	0.016	2.979	0.005	0.005	0.020	0.100	0.300	99.7	128	364
NH3+NH4+	0.11	0.15	0.04	4.93	0.01	0.01	0.04	0.40	1.17	92.1	102	336
NH4+	0.11	0.15	0.04	4.93	0.01	0.01	0.04	0.40	1.17	92.1	102	336
NO2	0.18	0.13	0.12	2.77	0.01	0.01	0.17	0.40	0.71	99.7	50	364
NO3-	0.04	0.06	0.03	2.55	0.01	0.01	0.03	0.12	0.50	82.7	29	302
Na+	0.26	0.34	0.13	3.43	0.01	0.01	0.14	0.85	2.76	99.7	12	364
SO2	0.30	0.80	0.12	2.89	0.01	0.04	0.08	0.93	10.64	99.7	2	364
SO4--	0.23	0.22	0.15	2.72	0.01	0.03	0.17	0.68	1.45	98.9	7	361
SO4-- corr	0.21	0.22	0.12	3.39	-0.00	0.01	0.14	0.65	1.44	98.9	7	361

NO0099R Lista Norway

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
PM10-PM25	9.66	6.35	7.50	2.14	1.32	1.56	8.57	21.50	26.59	98.3	0	52
PM25	6.83	4.16	5.90	1.68	2.04	2.17	5.40	17.06	21.32	98.3	0	52

PL0002R Jarczew Poland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.91	0.54	0.76	1.92	0.08	0.21	0.78	1.89	2.87	39.7	0	145
NH3+NH4+	2.85	1.91	2.44	1.73	0.53	0.90	2.52	5.29	20.79	94.8	0	346
NH4+	1.71	1.21	1.41	1.85	0.16	0.52	1.40	3.90	8.75	89.3	0	326
NO2	3.21	1.97	2.78	1.68	0.90	1.20	2.65	6.54	14.20	97.8	0	357
NO3-	0.70	0.53	0.55	2.03	0.06	0.17	0.52	1.77	3.34	92.3	0	337
SO2	2.48	2.77	1.58	2.61	0.10	0.40	1.50	9.14	21.90	99.2	1	362
SO4--	1.41	0.92	1.18	1.84	0.10	0.43	1.21	3.01	9.22	97.5	3	356

PL0003R Sniezka Poland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.29	0.18	0.24	1.87	0.03	0.08	0.24	0.66	1.07	100.0	0	365
NH3+NH4+	0.82	0.48	0.67	1.96	0.03	0.22	0.72	1.69	2.93	100.0	1	365
NH4+	0.59	0.34	0.47	2.07	0.03	0.13	0.51	1.18	1.78	100.0	5	365
NO2	1.09	0.62	0.92	1.85	0.20	0.30	0.90	2.20	3.00	100.0	0	365
NO3-	0.23	0.14	0.19	1.92	0.02	0.05	0.19	0.52	0.75	100.0	0	365
SO2	1.08	0.60	0.91	1.85	0.20	0.30	0.95	2.20	3.00	100.0	0	365
SO4--	0.73	0.38	0.61	1.95	0.10	0.10	0.71	1.38	2.08	100.0	21	365

PL0004R Leba Poland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.67	0.64	0.47	2.33	0.01	0.12	0.47	1.74	5.85	99.7	1	364
NH3+NH4+	1.79	1.37	1.38	2.10	0.17	0.37	1.40	4.55	9.09	89.6	0	327
NH4+	1.26	1.00	0.92	2.44	0.03	0.18	1.01	2.96	8.59	98.4	5	359
NO2	1.60	1.21	1.28	1.93	0.20	0.50	1.30	3.70	11.10	100.0	0	365
NO3-	0.56	0.63	0.36	2.60	0.01	0.08	0.38	1.65	5.82	98.4	1	359
SO2	1.31	1.19	0.98	2.12	0.10	0.30	0.90	3.40	8.20	83.3	1	304
SO4--	1.42	0.73	1.24	1.71	0.10	0.51	1.27	2.68	5.48	82.7	1	302

PL0005R Diabla Gora Poland

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.58	0.52	0.44	2.06	0.10	0.15	0.40	1.52	4.41	98.6	0	360
NH3+NH4+	1.77	1.04	1.48	1.88	0.22	0.49	1.56	3.83	5.85	98.6	0	360
NO2	0.77	0.67	0.62	1.87	0.01	0.27	0.58	1.87	6.93	98.6	1	360
SO2	0.81	1.57	0.39	2.98	0.04	0.08	0.36	2.96	14.67	97.5	2	356
SO4--	0.88	0.78	0.67	2.14	0.04	0.18	0.70	1.94	8.14	98.6	1	360

PT0001R Braganca Portugal

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
PM10	14.27	10.42	11.49	2.04	1.20	2.29	11.93	30.88	52.73	6.8	0	25

RU0001R Janiskoski Russian Federation

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	0.23	0.15	0.19	2.14	0.01	0.05	0.21	0.49	0.92	91.0	0	332
NO3-	0.04	0.04	0.03	2.12	0.01	0.01	0.03	0.11	0.22	91.0	0	332
SO2	0.87	2.82	0.21	4.34	0.06	0.06	0.11	3.39	40.59	89.0	0	325
SO4--	0.36	0.35	0.24	2.53	0.03	0.06	0.24	1.08	2.74	91.0	0	332

RU0016R Shepeljovo Russian Federation

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	0.48	0.29	0.40	2.02	0.01	0.14	0.44	1.00	2.06	95.9	0	350
NO3-	0.17	0.16	0.12	2.25	0.01	0.03	0.12	0.42	1.55	95.9	0	350
SO2	0.72	0.67	0.49	2.42	0.06	0.11	0.50	2.19	4.70	95.9	0	350
SO4--	0.39	0.28	0.31	2.02	0.03	0.09	0.32	0.88	2.65	95.9	0	350

RU0018R Danki Russian Federation

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	0.57	0.34	0.49	1.80	0.04	0.17	0.47	1.18	2.33	88.5	0	323
NO3-	0.25	0.25	0.17	2.55	0.01	0.03	0.17	0.70	1.75	88.5	0	323
SO2	0.35	0.49	0.21	2.62	0.06	0.06	0.18	1.28	3.96	88.5	0	323
SO4--	0.55	0.41	0.42	2.07	0.03	0.14	0.42	1.31	2.28	88.5	0	323

SE0005R Bredkalen Sweden

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.06	0.07	0.04	2.76	0.01	0.01	0.04	0.17	0.70	96.7	109	353
NH3+NH4+	0.19	0.24	0.08	4.22	0.01	0.01	0.09	0.65	1.73	95.1	157	347
NO2	0.14	0.24	0.08	2.34	0.05	0.05	0.05	0.42	3.02	95.9	264	350
SO2	0.05	0.09	0.02	3.14	0.01	0.01	0.01	0.21	0.72	96.7	225	353
SO4--	0.22	0.23	0.14	2.75	0.00	0.01	0.14	0.70	1.78	97.0	12	354
Black smoke	0.72	0.80	0.52	2.01	0.38	0.38	0.38	2.53	5.35	95.9	287	350

SE0008R Hoburg Sweden

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.11	0.94	0.84	2.17	0.05	0.26	0.85	2.91	8.52	97.5	5	356
SO2	0.52	0.48	0.34	2.87	0.01	0.08	0.39	1.44	3.57	97.5	13	356
SO4--	0.70	0.54	0.53	2.27	0.00	0.11	0.58	1.80	2.76	97.5	3	356
Black smoke	2.56	2.79	1.46	3.10	0.38	0.38	1.84	6.71	23.15	99.7	135	364

SE0011R Vavihill Sweden

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.61	0.86	0.36	2.71	0.01	0.08	0.37	1.95	8.65	100.0	9	365
NH3+NH4+	1.26	1.30	0.80	2.89	0.01	0.13	0.86	3.81	9.39	99.7	30	364
NO2	1.39	1.39	1.02	2.13	0.05	0.34	0.97	3.56	11.56	92.3	2	337
SO2	0.37	0.44	0.22	3.16	0.01	0.01	0.23	1.17	3.57	100.0	24	365
SO4--	0.70	0.54	0.52	2.24	0.02	0.12	0.54	1.90	2.72	100.0	0	365
Black smoke	2.56	2.59	1.36	3.37	0.38	0.38	1.89	8.20	11.87	92.1	150	336

SE0012R Aspvreten Sweden

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
PM10	8.88	7.00	6.75	2.15	1.48	1.58	6.21	24.61	27.86	6.8	0	25

SE0014R Råö Sweden

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.70	1.24	0.38	2.95	0.01	0.07	0.36	1.93	13.84	97.5	13	356
NH3+NH4+	0.99	1.36	0.54	3.40	0.01	0.06	0.56	2.88	10.34	97.8	40	357
NO2	1.38	1.30	1.05	2.03	0.04	0.38	0.97	3.23	10.39	95.3	2	348
SO2	0.41	0.34	0.28	2.77	0.01	0.05	0.31	1.02	2.16	97.8	15	357
SO4--	0.82	0.68	0.61	2.35	0.00	0.11	0.66	1.97	5.89	97.8	4	357
Black smoke	1.34	1.93	0.69	2.86	0.35	0.35	0.35	5.11	18.89	97.0	246	354

SI0008R Iskrba Slovenia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.22	0.20	0.15	2.50	0.01	0.03	0.16	0.65	1.17	99.2	1	362
NH3+NH4+	0.90	0.56	0.74	1.98	0.07	0.23	0.83	1.94	3.38	99.2	0	362
SO2	0.67	1.09	0.25	4.70	0.00	0.01	0.25	2.59	7.41	99.2	16	362
SO4--	0.82	0.62	0.62	2.26	0.03	0.12	0.69	1.88	4.43	99.2	0	362

SK0002R Chopok Slovakia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.09	0.05	0.08	1.65	0.02	0.04	0.08	0.18	0.27	97.5	8	356
NO2	0.80	0.28	0.76	1.40	0.00	0.40	0.80	1.20	2.50	94.5	0	345
NO3-	0.20	0.17	0.13	3.01	0.01	0.01	0.16	0.53	0.89	98.4	52	359
SO2	0.69	0.52	0.55	1.97	0.10	0.20	0.50	1.80	3.00	94.5	0	345
SO4--	0.47	0.44	0.31	2.51	0.04	0.07	0.31	1.27	2.85	97.8	0	357
SPM	11.60	7.60	8.82	2.31	0.80	2.03	12.38	23.24	32.44	78.6	1	48

SK0004R Stara Lesna Slovakia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.07	0.06	0.06	2.04	0.01	0.02	0.06	0.18	0.44	98.4	76	359
NO2	1.48	0.47	1.42	1.34	0.70	0.90	1.40	2.20	4.00	99.7	0	364
NO3-	0.30	0.18	0.25	1.96	0.01	0.09	0.26	0.63	1.42	98.4	12	359
PM10	18.95	17.90	14.05	3.17	4.01	4.49	15.34	53.89	69.04	77.3	0	51
SO2	0.81	0.69	0.64	1.91	0.10	0.29	0.60	2.20	5.30	98.1	0	358
SO4--	0.95	0.56	0.79	1.96	0.05	0.26	0.83	1.94	2.95	98.4	0	359

SK0005R Liesek Slovakia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.11	0.15	0.07	2.29	0.01	0.02	0.06	0.49	1.57	98.4	33	359
NO2	1.66	0.73	1.50	1.66	0.10	0.96	1.50	2.94	6.00	91.2	6	333
NO3-	0.49	0.31	0.42	1.76	0.00	0.18	0.39	1.14	1.91	99.5	0	363
SO2	1.32	1.25	0.99	2.04	0.20	0.40	0.90	3.79	8.50	96.2	0	351
SO4--	1.25	0.77	1.07	1.74	0.00	0.42	1.06	2.39	5.97	99.5	0	363
SPM	34.85	21.36	30.79	1.60	11.61	11.62	31.64	59.24	135.86	57.5	0	35

SK0006R Starina Slovakia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.26	0.26	0.17	2.38	0.02	0.05	0.16	0.79	1.76	97.8	4	357
NO2	1.34	0.75	1.19	1.60	0.15	0.60	1.10	2.70	6.40	98.9	2	361
NO3-	0.28	0.19	0.23	2.13	0.03	0.03	0.26	0.59	1.83	97.8	23	357
SO2	1.26	1.25	0.92	2.12	0.10	0.30	0.80	3.50	11.30	97.0	0	354
SO4--	1.10	0.70	0.89	2.01	0.05	0.25	0.96	2.37	3.89	96.4	0	352
SPM	14.76	10.57	9.28	3.29	0.53	0.80	14.38	34.28	42.27	84.9	7	52

SK0007R Topoliniky Slovakia

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.13	0.11	0.11	1.79	0.02	0.05	0.10	0.45	0.60	99.2	1	362
NO2	2.82	1.48	2.49	1.65	0.30	1.20	2.50	5.70	10.00	100.0	0	365
NO3-	1.16	0.63	1.01	1.72	0.16	0.44	0.99	2.46	3.76	98.9	0	361
SO2	2.53	2.69	1.64	2.45	0.20	0.50	1.40	8.54	13.80	96.4	0	352
SO4--	1.64	0.98	1.38	1.81	0.32	0.50	1.39	3.79	5.46	98.4	0	359
SPM	23.27	10.79	19.88	2.03	0.80	4.98	22.31	41.35	46.76	84.1	1	50

TR0001R Cubuk II Turkey

January 2002 - December 2002

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.14	0.28	0.09	2.85	-0.89	-0.01	0.08	0.51	2.92	84.7	63	309
HNO3+NO3-	0.28	0.36	0.18	2.67	-0.87	0.03	0.18	0.84	3.01	89.3	0	326
NH3	0.27	0.24	0.21	2.96	-0.10	-0.02	0.24	0.71	1.64	83.6	42	305
NH3+NH4+	0.77	0.39	0.66	1.90	0.00	0.19	0.76	1.43	2.42	94.2	0	344
NH4+	0.53	0.33	0.43	2.00	-0.03	0.11	0.46	1.14	1.71	93.7	2	342
NO2	1.37	2.76	0.76	2.71	-0.05	0.14	0.73	4.02	38.17	95.3	8	348
NO3-	0.14	0.21	0.08	3.17	-0.00	0.01	0.08	0.49	2.10	97.0	16	354
SO2	2.62	5.87	0.76	4.88	-0.07	0.05	0.69	14.08	52.01	81.9	12	299
SO4--	0.81	0.97	0.57	2.24	0.03	0.17	0.57	2.01	12.06	97.0	1	354

Annex 4

Overview of sampling and analytical methods 2002

Country: **Austria**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Daily	Ion chromatography
Nitrate	All	Wet-only	Daily	Ion chromatography
Ammonium	All	Wet-only	Daily	Ion chromatography
Magnesium	All	Wet-only	Daily	Ion chromatography
Sodium	All	Wet-only	Daily	Ion chromatography
Chloride	All	Wet-only	Daily	Ion chromatography
Calcium	All	Wet-only	Daily	Ion chromatography
Potassium	All	Wet-only	Daily	Ion chromatography
Conductivity	All	Wet-only	Daily	Conductivity meter
pH	All	Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	Instrumental: UV-fluorescence	Hourly	UV-fluorescence
Sulphur dioxide	AT02	KOH-impregnated Whatman 40 filters, 21.6 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	Instrumental: Chemiluminescence	Daily	
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	AT02	Teflon filter, PALL Gelman Zefluor 2 µm, 47 mm diameter, 21.6 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	All	High Volume Sampler, glass fibre filters with organic binder, 720 m^3/day, EN 12341	Daily	Micro balance
$PM_{2.5}$	AT02	High Volume Sampler, glass fibre filters with organic binder, 720 m^3/day, EN 12341	Daily	Micro balance
Suspended particulate matter				
Sum of nitric acid and nitrate	AT02	Aerosol as for sulphate, KOH impregnated Whatman 40 filters, 21.6 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	AT02	Aerosol as for sulphate, citric acid impregnated Whatman 40 filters, 21.6 m^3/day	Daily	Ion chromatography
Acidity				
Heavy metals (Pb, Cd)	All	PM_{10}	Daily (irregular)	GF-AAS
Heavy metals (As, Ni)	AT02	PM_{10}	Daily (irregular)	GF-AAS

Country: **Croatia**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Bulk	Daily	
Precipitation amount, official gauge				
Sulphate	All	Bulk	Daily	Ion chromatography
Nitrate	All	Bulk	Daily	Ion chromatography
Ammonium	All	Bulk	Daily	Ion chromatography
Magnesium	All	Bulk	Daily	Ion chromatography
Sodium	All	Bulk	Daily	Ion chromatography
Chloride	All	Bulk	Daily	Ion chromatography
Calcium	All	Bulk	Daily	Ion chromatography
Potassium	All	Bulk	Daily	Ion chromatography
Conductivity	All	Bulk	Daily	Conductivity meter
pH	All	Bulk	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	Absorbing solution TCM, 1.6–2.5 m^3/day	Daily	Pararosanilin method
Nitrogen dioxide	All	Absorbing solution Trietanolamin, 1.6–2.5 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone				
Sulphate				
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Czech Republic**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only and bulk	Weekly	Gravimetric
Precipitation amount, official gauge	All	Meteorological Station	Daily	Automatically gauge
Fluoride	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	Ion Chromatography
Sulphate	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	Ion chromatography
Nitrate	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	Ion chromatography
Ammonium	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	Spectrophotometric, Indophenol method, SFA
Magnesium	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	F-AAS
Sodium	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	F-AAS
Chloride	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	Ion chromatography
Calcium	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	F-AAS
Potassium	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	F-AAS
Conductivity	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	Conductivity electrode
pH	All	Wet-only (weekly), bulk (daily) at CZ03	Weekly, daily at CZ03	pH electrode
Trace metals:(Pb, Cd, Ni)	All	Bulk (weekly)	weekly	GF-AAS
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 40 filter, 6-8 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	Absorbing solution NaOH and guajacol, 0.72 m^3/day	Daily	Spectrophotometric, modified Jacobs - Hochheiser method
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Teflon filter Gelman, pore size 1 µm, 20 m^3/day: discontinuous in winter (1.1.-31.3., 1.10.-31.12.) 40 m^3/day: continuous in summer (1.4.-30.9.),	24 hour once in 6 days	X-ray fluorescence
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	All	KOH-impregnated Whatman 40 filter, 6-8 m^3/day + Teflon filter Gelman 47, pore size 0.45 µm, 6-8 m^3/day	Daily	Ion Chromatography
Sum of ammonia and ammonium	All	Citric acid impregnated Whatman 40 filter, 6-8 m^3/day + Teflon filter Gelman 47, pore size 0.45 µm, 6-8 m^3/day	Daily	Spectrophotometric, Indophenol method ,SFA
Trace metals (Pb, Cd)	All	Nitrocellulose filter Pragopor, pore size 0,8 µm, 50 mm 20 m^3/day: discontinuous in winter (1.1.-31.3., 1.10.-31.12.) 40 m^3/day: continuous in summer (1.4.-30.9.),	24 hour once in 6 days	GF-AAS

Country: **Denmark**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	DK05, DK08, DK22	Wet-only	Two-weekly	
Precipitation amount, official gauge				
Sulphate	DK05, DK08, DK22	Wet-only	Two-weekly	Ion chromatography
Nitrate	DK05, DK08, DK22	Wet-only	Two-weekly	Ion chromatography
Ammonium	DK05, DK08, DK22	Wet-only	Two-weekly	ISO 11732 CFA (continuously flow analysis) and spectrophotometric detection
Magnesium	DK05, DK08, DK22	Wet-only	Two-weekly	Atomic absorption method
Sodium	DK05, DK08, DK22	Wet-only	Two-weekly	Atomic emission method
Chloride	DK05, DK08, DK22	Wet-only	Two-weekly	Ion chromatography
Calcium	DK05, DK08, DK22	Wet-only	Two-weekly	Atomic absorption method
Potassium	DK05, DK08, DK22	Wet-only	Two-weekly	Atomic emission method
Conductivity	DK05, DK08, DK22	Wet-only	Two-weekly	Conductivity meter
pH	DK05, DK08, DK22	Wet-only	Two-weekly	pH meter
Acidity				
Air				
Sulphur dioxide	DK03, DK05, DK08	KOH-impregnated Whatman 41 filters, 58 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	DK08	KI-method (glass sinter), 0.7 m^3/day	Daily	Spectrophotometric, EMEP manual (4.11)
Nitric acid				
Ammonia				
Ozone	DK05, DK31,DK41	UV-monitor	Hourly	UV-absorption
Sulphate	DK03, DK05, DK08	Millipore RAWP 1.2 μm, 58 m^3/day	Daily	Proton Induced X-ray Emission (PIXE)
Nitrate				
Ammonium				
Sodium	DK03, DK05, DK08	Millipore RAWP 1.2 μm, 58 m^3/day	Daily	Atomic absorption method
Heavy metals (Cr, Mn, Fe, Ni, Cu, Zn, As, Cd, Pb)	DK03, DK05, DK08	Millipore RAWP 1.2 μm, 58 m^3/day	Daily	Proton Induced X-ray Emission (PIXE)
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	DK03, DK05, DK08	Aerosol filter as for sulphate + KOH-impregnated Whatman 41, 58 m^3/day	Daily	Spectrophotometric, Griess after hydrazine reduction
Sum of ammonia and ammonium	DK03, DK05, DK08	Aerosol filter as for sulphate + Oxalic acid impregnated Whatman 41, 58 m^3/day	Daily	ISO 11732 CFA (continuously flow analysis) and spectrophotometric detection
Acidity				

DK03: Tange; DK05: Keldsnor; DK08: Anholt; DK22: Sepstrup Sande; DK31: Ulborg; DK41: Lille Valby

Country: **Estonia**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Bulk	Weekly	
Precipitation amount, official gauge				
Sulphate	All	Bulk	Weekly	Ion chromatography
Nitrate	All	Bulk	Weekly	Ion chromatography
Ammonium	All	Bulk	Weekly	Spectrophotometric, Indophenol method
Magnesium	All	Bulk	Weekly	Atomic absorption method
Sodium	All	Bulk	Weekly	Atomic emission method, addition of caesium
Chloride	All	Bulk	Weekly	Ion chromatography
Calcium	All	Bulk	Weekly	Atomic absorption method, addition of lanthanum
Potassium	All	Bulk	Weekly	Atomic emission method, addition of caesium
Conductivity	All	Bulk	Weekly	Conductivity meter
pH	All	Bulk	Weekly	pH meter
Acidity				
Air				
Sulphur dioxide	EE09	NaOH-impregnated Whatman 40 filters, 4-5 m^3/day	Daily	Ion chromatography
Sulphur dioxide	EE11	Instrumental: UV-fluorescence	Daily	UV-fluorescence
Nitrogen dioxide	EE09	NaI-impregnated glass sinters, 0.7 m^3/day	Daily	Spectrophotometric, Griess method
Nitrogen dioxide	EE11	Instrumental: Chemiluminescence	Daily	Chemiluminescence
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	EE09	Whatman 40 filter, 4-5 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Finland**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	
Precipitation amount, official gauge	FI04, FI09, FI17, FI22	Bulk	Daily	
Sulphate	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Ion chromatography
Nitrate	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Ion chromatography
Ammonium	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Ion chromatography
Magnesium	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Ion chromatography
Sodium	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Ion chromatography
Chloride	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Ion chromatography
Calcium	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Ion chromatography
Potassium	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Ion chromatography
Conductivity	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	Conductivity meter
pH	FI04, FI09, FI17, FI22	Bulk; At FI04 daily samplings of a week are combined for analysis	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	FI09, FI17, FI22, FI37	NaOH-impregnated Whatman 40 filters, 24 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	FI09, FI17, FI22, FI37	Instrumental: Chemiluminescence	Hourly	Chemiluminescence
Nitric acid				
Ammonia				
Ozone	FI09, FI17, FI22, FI37	UV-monitor	Hourly	UV-absorption
Sulphate	FI09, FI17, FI22, FI37	Whatman 40 filter, 24 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	FI09, FI17, FI22, FI37	Whatman 40 + NaOH impregnated Whatman 40 filter, 24 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	FI09, FI17, FI22, FI37	Oxalic acid impregnated Whatman 40 filter, 24 m^3/day	Daily	Ion chromatography
Acidity				

Country: **France**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Daily	Ion chromatography
Nitrate	All	Wet-only	Daily	Ion chromatography
Ammonium	All	Wet-only	Daily	Spectrophotometric, Flow injection analysis
Magnesium	All	Wet-only	Daily	Ion chromatography
Sodium	All	Wet-only	Daily	Ion chromatography
Chloride	All	Wet-only	Daily	Ion chromatography
Calcium	All	Wet-only	Daily	Ion chromatography
Potassium	All	Wet-only	Daily	Ion chromatography
Conductivity	All	Wet-only	Daily	Conductivity meter
pH	All	Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	Absorbing solution H_2O_2, 2.5 m^3/day	Daily	Ion chromatography
Nitrogen dioxide				
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman 40 filter, 2.5 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Germany**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	
Precipitation amount, official gauge				
Sulphate	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Ion chromatography
Nitrate	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Ion chromatography
Ammonium	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Spectrophotometric, Flow injection analysis
Magnesium	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Atomic absorption method, addition of lanthanum
Sodium	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Atomic absorption method, addition of caesium
Chloride	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Ion chromatography
Calcium	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Atomic absorption method, addition of lanthanum
Potassium	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Atomic absorption method, addition of caesium
Conductivity	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	Conductivity meter
pH	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	pH meter
Acidity				
Air				
Sulphur dioxide	All	Absorbing solution TCM, 1.0 m^3/day	Daily	Pararosanilin method
Nitrogen dioxide	All	Absorbing solution Saltzman, 1 m^3/day	Daily	Saltzman
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	DE02, DE04	Schleicher & Schüll 589/2L filter, 1.0 m^3/day	Daily	X-ray fluorescence (XRF)
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	All		Daily	
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Greece**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount				
Precipitation amount, official gauge				
Sulphate				
Nitrate				
Ammonium				
Magnesium				
Sodium				
Chloride				
Calcium				
Potassium				
Conductivity				
pH				
Acidity				
Air				
Sulphur dioxide	GR01	Absorbing solution H_2O_2, 1.1 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	GR01	Absorbing solution TGS, 1.1 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	GR01	Whatman 41 filter, 1.1 m^3/day	Daily	Ion chromatography
Nitrate	GR01	Whatman 41 filter, 1.1 m^3/day	Daily	Ion chromatography
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Hungary**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Daily	Ion chromatography
Nitrate	All	Wet-only	Daily	Ion chromatography
Ammonium	All	Wet-only	Daily	Spectrophotometric, Indophenol method
Magnesium	All	Wet-only	Daily	Atomic absorption method
Sodium	All	Wet-only	Daily	Atomic absorption method
Chloride	All	Wet-only	Daily	Ion chromatography
Calcium	All	Wet-only	Daily	Atomic absorption method
Potassium	All	Wet-only	Daily	Atomic absorption method
Conductivity	All	Wet-only	Daily	Conductivity meter
pH	All	Wet-only	Daily	pH meter
Acidity				
Sulphur dioxide	All	KOH-impregnated Whatman 40 filter, 25 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	Iodide method (impregnated glass sinter), 0.7 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid	All	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day	Daily	Ion chromatography
Ammonia	All	Alkaline impregnated Whatman 40 filter, 25 m^3/day	Daily	Spectrophotometric, Indophenol method
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day	Daily	Ion chromatography
Nitrate	All	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day	Daily	Ion chromatography
Ammonium	All	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day	Daily	Spectrophotometric, Indophenol method
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	All	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	All	Alkaline impregnated Whatman 40 filter, 25 m^3/day + Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day	Daily	Spectrophotometric, Indophenol method
Acidity				

Country: **Iceland**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Bulk	Daily	
Precipitation amount, official gauge				
Sulphate	All	Bulk	Daily	ICP-AES
Nitrate				
Ammonium				
Magnesium				
Sodium	All	Bulk	Daily	ICP-AES
Chloride				
Calcium				
Potassium				
Conductivity	All	Bulk	Daily	Conductivity meter
pH	All	Bulk	Daily	pH meter
Acidity				
Air				
Sulphur dioxide				
Nitrogen dioxide				
Nitric acid				
Ammonia				
Ozone				
Sulphate	All	Whatman 40 filter, 30 m^3/day	Daily	ICP-AES
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Ireland: IE01 (lab.: Met Eireann)**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	IE01	Bulk	Daily	
Precipitation amount, official gauge				
Sulphate	IE01	Bulk	Daily	Ion chromatography
Nitrate	IE01	Bulk	Daily	Ion chromatography
Ammonium	IE01	Bulk	Daily	Ion chromatography
Magnesium	IE01	Bulk	Daily	Ion chromatography
Sodium	IE01	Bulk	Daily	Ion chromatography
Chloride	IE01	Bulk	Daily	Ion chromatography
Calcium	IE01	Bulk	Daily	Ion chromatography
Potassium	IE01	Bulk	Daily	Ion chromatography
Conductivity	IE01	Bulk	Daily	Conductivity meter
pH	IE01	Bulk	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	IE01	KOH-impregnated Whatman 40 filter, **15-20** m^3/day	Daily	Ion chromatography
Nitrogen dioxide	IE01	NaI method (glass sinter) 0.7 m^3/day	Daily	Spectrophotometric, EMEP Manual 4.11
Nitric acid				
Ammonia				
Ozone				
Sulphate	IE01	Whatman 40 filter, **15-20** m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Ireland: IE02, IE03, IE04 (lab.: ESB)**	Main components and ozone - EMEP		Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Daily	Ion chromatography
Nitrate	All	Wet-only	Daily	Ion chromatography
Ammonium	All	Wet-only	Daily	Ion chromatography
Magnesium	All	Wet-only	Daily	Ion chromatography
Sodium	All	Wet-only	Daily	Ion chromatography
Chloride	All	Wet-only	Daily	Ion chromatography
Calcium	All	Wet-only	Daily	Ion chromatography
Potassium	All	Wet-only	Daily	Ion chromatography
Conductivity	All	Wet-only	Daily	Conductivity meter
pH	All	Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide				
Nitrogen dioxide				
Nitric acid				
Ammonia				
Ozone				
Sulphate	All	Gelman GN-6 Metricel filter, 20 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Italy: IT01 (lab.: CNR)**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	IT01	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	IT01	Wet-only	Daily	Ion chromatography
Nitrate	IT01	Wet-only	Daily	Ion chromatography
Ammonium	IT01	Wet-only	Daily	Ion chromatography
Magnesium	IT01	Wet-only	Daily	Ion chromatography
Sodium	IT01	Wet-only	Daily	Ion chromatography
Chloride	IT01	Wet-only	Daily	Ion chromatography
Calcium	IT01	Wet-only	Daily	Ion chromatography
Potassium	IT01	Wet-only	Daily	Ion chromatography
Conductivity	IT01	Wet-only	Daily	Conductivity meter
pH	IT01	Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	IT01	Diffusion tubes NaCl and Na2CO3 + glycerine, 17 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	IT01	Instrumental: Chemiluminescence	Daily	Chemiluminescence
Nitric acid	IT01	Diffusion tubes NaCl, 17 m^3/day	Daily	Ion chromatography
Ammonia	IT01	Diffusion tubes coated with phosphorous acid, 17 m^3/day	Daily	Ion chromatography
Ozone	IT01	UV-monitor	Hourly	UV-absorption
Sulphate	IT01	Teflon filter Gelman Zeflour 1 μm, 17 m^3/day From 1.8.2002: Nylasorb filter, 17 m^3/day	Daily	Ion chromatography
Nitrate	IT01	Teflon filter Gelman Zeflour 1 μm, 17 m^3/day + Nylasorb filter From 1.8.2002: Nylasorb filter, 17 m^3/day	Daily	Ion chromatography
Ammonium	IT01	Teflon filter Gelman Zeflour 1 μm, 17 m^3/day + phosphorous acid impregnated filter From 1.8.2002: Phosphorous acid impregnated filter, 17 m^3/day	Daily	Ion chromatography
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Italy, IT04 (lab.: JRC)**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	IT04	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	IT04	Wet-only	Daily	Ion chromatography
Nitrate	IT04	Wet-only	Daily	Ion chromatography
Ammonium	IT04	Wet-only	Daily	Ion chromatography
Magnesium				
Sodium				
Chloride				
Calcium				
Potassium				
Conductivity				
pH	IT04	Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	IT04	Instrumental: UV-fluorescence	Daily	UV-fluorescence
Nitrogen dioxide	IT04	Instrumental: Chemiluminescence	Daily	Chemiluminescence
Nitric acid				
Ammonia				
Ozone	IT04	UV-monitor	Hourly	UV-absorption
Sulphate	IT04	Whatman quartz fibre filter QFF, 55 m^3/day	Daily	Ion chromatography
Nitrate	IT04	Whatman quartz fibre filter QFF, 55 m^3/day	Daily	Ion chromatography
Ammonium	IT04	Whatman quartz fibre filter QFF, 55 m^3/day	Daily	Ion chromatography
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}		Whatman quartz fibre filter QFF, 55 m^3/day	Daily	Weighing at 50% RH
$PM_{2.5}$		Whatman quartz fibre filter QFF, 55 m^3/day	Daily	Weighing at 50% RH
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity	IT04	Whatman quartz fibre filter QFF, 55 m^3/day	Daily	pH meter

Country: **Latvia**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	LV16: Bulk, LV10: Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	LV16: Bulk, LV10: Wet-only	Daily	Ion chromatography
Nitrate	All	LV16: Bulk, LV10: Wet-only	Daily	Ion chromatography
Ammonium	All	LV16: Bulk, LV10: Wet-only	Daily	Spectrophotometric, Indophenol method
Magnesium	All	LV16: Bulk, LV10: Wet-only	Daily	Atomic absorption method
Sodium	All	LV16: Bulk, LV10: Wet-only	Daily	Atomic emission method
Chloride	All	LV16: Bulk, LV10: Wet-only	Daily	Ion chromatography
Calcium	All	LV16: Bulk, LV10: Wet-only	Daily	Atomic absorption method
Potassium	All	LV16: Bulk, LV10: Wet-only	Daily	Atomic emission method
Conductivity	All	LV16: Bulk, LV10: Wet-only	Daily	Conductivity meter
pH	All	LV16: Bulk, LV10: Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 41 filter, 14-20 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	Absorbing KI solution in absorbing tubes with glass granules, 0.2-0.4 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman 41 filter, 14-20 m^3/day	Daily	Ion chromatography
Nitrate	All	Whatman 41 filter, 14-20 m^3/day	Daily	Ion chromatography
Ammonium	All	Whatman 41 filter, 14-20 m^3/day	Daily	Spectrophotometric, Indophenol method
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	All	KOH-impregnated Whatman 41 filter, 14-20 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	All	Oxalic acid impregnated Whatman 41 filter, 14-20 m^3/day	Daily	Spectrophotometric, Indophenol method
Acidity				

Country: **Lithuania**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Daily	Ion chromatography
Nitrate	All	Wet-only	Daily	Ion chromatography
Ammonium	All	Wet-only	Daily	Spectrophotometric, Indophenol method
Magnesium				
Sodium	All	Wet-only	Daily	Atomic emission method
Chloride	All	Wet-only	Daily	Ion chromatography
Calcium	All	Wet-only	Daily	Atomic absorption method
Potassium	All	Wet-only	Daily	Atomic emission method
Conductivity	All	Wet-only	Daily	Conductivity meter
pH	All	Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 40 filter, 24 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	KI-method (glass sinter), 0.4-0.7 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman 40 filter, 24 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	All	KOH impregnated Whatman 40 filter, 16-17 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	All	Oxalic acid impregnated Whatman 40 filter, 16-17 m^3/day	Daily	Spectrophotometric, Indophenol method
Acidity				

Country: **The Netherlands**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge	All	Bulk	4 weekly	
Sulphate	NL0009	Wet-only	Daily [1]	Ion chromatography
Nitrate	NL0009	Wet-only	Daily [1]	Ion chromatography
Ammonium	NL0009	Wet-only	Daily [1]	CFA[2]
Magnesium	NL0009	Wet-only	Daily [1]	ICP/AES[3]
Sodium	NL0009	Wet-only	Daily [1]	ICP/AES
Chloride	NL0009	Wet-only	Daily [1]	Ion chromatography
Calcium	NL0009	Wet-only	Daily [1]	ICP/AES
Potassium	NL0009	Wet-only	Daily [1]	ICP/AES
Conductivity	NL0009	Wet-only	Daily [1]	Conductivity meter
pH	NL0009	Wet-only	Daily [1]	pH meter
Acidity	NL0009	Wet-only	Daily [1]	Titration
Air				
Sulphur dioxide	All	Instrumental: UV-fluorescence	Hourly	UV-fluorescence
Nitrogen dioxide	All	Instrumental: Chemiluminescence	Hourly	Chemiluminescence
Nitric acid				
Ammonia	NL10	Absorption in $NaHSO_4$, membrane separation, conductivity measurement	Hourly	Conductivity
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman 42 filter, 2.5 m^3/day, filter mounted behind denuder	Daily	Ion chromatography
Nitrate	All	Whatman 42 filter, 2.5 m^3/day, filter mounted behind denuder	Daily	Ion chromatography
Ammonium	All	Whatman 42 filter, 2.5 m^3/day, filter mounted behind denuder	Daily	CFA[2]
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride	All	Whatman 42 filter, 2.5 m^3/day, filter mounted behind denuder	Daily	CFA[2]
PM_{10}	NL10	Instrumental: beta absorption	Hourly	Beta absorption
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

[1] precipitation measurements on daily basis are only carried out on station NL0009; On both EMEP stations (NL0009 and NL0010) precipitation is carried out on a 4 weekly basis.
[2] continuous flow analysis
[3] inductively coupled plasma/atomic emission spectrometry

Country: **Norway**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	NILU bulk sampler	Daily	By volume
Precipitation amount, official gauge				
Sulphate	All	NILU bulk sampler	Daily	Ion chromatography
Nitrate	All	NILU bulk sampler	Daily	Ion chromatography
Ammonium	All	NILU bulk sampler	Daily	Ion chromatography
Magnesium	All	NILU bulk sampler	Daily	Ion chromatography
Sodium	All	NILU bulk sampler	Daily	Ion chromatography
Chloride	All	NILU bulk sampler	Daily	Ion chromatography
Calcium	All	NILU bulk sampler	Daily	Ion chromatography
Potassium	All	NILU bulk sampler	Daily	Ion chromatography
Conductivity	All	NILU bulk sampler	Daily	Conductivity meter
pH	All	NILU bulk sampler	Daily	pH meter; potentiometric, glass electrode
Acidity				
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 40 filter 25 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	NaI-impregnated glass sinters, 0.7 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Teflon filter, Gelman Zefluor 2 µm, 25 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium	All	Teflon filter, Gelman Zefluor 2 µm, 25 m^3/day	Daily	Ion chromatography
Calcium	All	Teflon filter, Gelman Zefluor 2 µm, 25 m^3/day	Daily	Ion chromatography
Magnesium	All	Teflon filter, Gelman Zefluor 2 µm, 25 m^3/day	Daily	Ion chromatography
Potassium	All	Teflon filter, Gelman Zefluor 2 µm, 25 m^3/day	Daily	Ion chromatography
Chloride	All	Teflon filter, Gelman Zefluor 2 µm, 25 m^3/day	Daily	Ion chromatography
PM_{10}	NO01	Dichotomous sampler	Daily	by weight
$PM_{2.5}$	NO01	Dichotomous sampler	Daily	by weight
Suspended particulate matter				
Sum of nitric acid and nitrate	All	Aerosol filter as for sulphate + KOH impregnated filter as for SO_2, 25 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	All	Aerosol filter as for sulphate + oxalic acid impregnated filter, 25 m^3/day	Daily	Spectrophotometric, Indophenol method and IC
Acidity				

Country: **Poland: PL02, PL03, PL04 (lab. IMGW)**	Main components and ozone - EMEP		Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Bulk	Daily	
Precipitation amount, official gauge				
Sulphate	All	Bulk	Daily	Ion chromatography
Nitrate	All	Bulk	Daily	Ion chromatography
Ammonium	All	Bulk	Daily	Spectrophotometric, Chloramin T
Magnesium	All	Bulk	Daily	Atomic absorption method
Sodium	All	Bulk	Daily	Atomic absorption method
Chloride	All	Bulk	Daily	Ion chromatography
Calcium	All	Bulk	Daily	Atomic absorption method
Potassium	All	Bulk	Daily	Atomic absorption method
Conductivity	All	Bulk	Daily	Conductivity meter
pH	All	Bulk	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 40 filter, 3.5-4 m^3/day	Daily	Thorin
Nitrogen dioxide	All	Absorbing solution TGS, 0.7 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman 40 filter, 3.5-4 m^3/day	Daily	Thorin
Nitrate	All	Whatman 40 filter, 3.5-4 m^3/day	Daily	Spectrophotometric, Griess after hydrazine reduction
Ammonium	All	Whatman 40 filter, 3.5-4 m^3/day	Daily	Spectrophotometric, Chloramin T
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	All	NaF impregnated Whatman 40 filter, 3.5-4 m^3/day	Daily	Spectrophotometric, Griess after hydrazine reduction
Sum of ammonia and ammonium	All	Oxalic acid impregnated Whatman 40 filter, 3.5-4 m^3/day	Daily	Spectrophotometric, Chloramin T
Acidity				

Country: **Poland: PL05 (lab. IEP)**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	PL05	Bulk	Daily	
Precipitation amount, official gauge	PL05	Bulk	Daily	
Sulphate	PL05	Bulk	Daily	Capillary Electrophoresis
Nitrate	PL05	Bulk	Daily	Capillary Electrophoresis
Ammonium	PL05	Bulk	Daily	Spectrophotometric, Indophenol method
Magnesium	PL05	Bulk	Daily	Plasma emission spectrometry
Sodium	PL05	Bulk	Daily	Plasma emission spectrometry
Chloride	PL05	Bulk	Daily	Capillary Electrophoresis
Calcium	PL05	Bulk	Daily	Plasma emission spectrometry
Potassium	PL05	Bulk	Daily	Atomic emission method
Conductivity	PL05	Bulk	Daily	Conductivity meter
pH	PL05	Bulk	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	PL05	KOH-impregnated Whatman 40 filter, 16 m^3/day	Daily	Capillary Electrophoresis
Nitrogen dioxide	PL05	Iodide method (impregnated glass sinter), 0.7 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone	PL05	UV-monitor	Hourly	UV-absorption
Sulphate	PL05	Teflon filter Gelman Zefluor 2 μm, 16 m^3/day	Daily	Capillary Electrophoresis
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	PL05	Aerosol Teflon filter (as for sulphate) + NaOH impregnated Whatman 40 filter, 16 m^3/day	Daily	Capillary Electrophoresis
Sum of ammonia and ammonium	PL05	Aerosol Teflon filter (as for sulphate) + Oxalic acid impregnated Whatman 40 filter, 16 m^3/day	Daily	Spectrophotometric, Indophenol method
Acidity				

Country: **Portugal**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount				
Precipitation amount, official gauge	All	Rain gauge	Daily	
Sulphate	All	Bulk	Daily	Ion chromatography
Nitrate	All	Bulk	Daily	Ion chromatography
Ammonium	All	Bulk	Daily	Spectrophotometric, Indophenol method
Magnesium	All	Bulk	Daily	Ion chromatography
Sodium	All	Bulk	Daily	Ion chromatography
Chloride	All	Bulk	Daily	Ion chromatography
Calcium	All	Bulk	Daily	Ion chromatography
Potassium	All	Bulk	Daily	Ion chromatography
Conductivity	All	Bulk	Daily	Conductivity meter
pH	All	Bulk	Daily	pH meter
Acidity				
Air				
Sulphur dioxide				
Sulphur dioxide				
Nitrogen dioxide				
Nitric acid				
Ammonia				
Ozone	PT04	UV-monitor	Hourly	UV-absorption
Sulphate				
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Russian Federation**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Bulk	Daily	
Precipitation amount, official gauge				
Sulphate	All	Bulk	Daily	Ion chromatography
Nitrate	All	Bulk	Daily	Ion chromatography
Ammonium	All	Bulk	Daily	Ion chromatography
Magnesium	All	Bulk	Daily	Atomic absorption method
Sodium	All	Bulk	Daily	Ion chromatography
Chloride	All	Bulk	Daily	Ion chromatography
Calcium	All	Bulk	Daily	Atomic absorption method + addition of lanthanum
Potassium	All	Bulk	Daily	Ion chromatography
Conductivity	All	Bulk	Daily	Conductivity meter
pH	All	Bulk	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	RU01	NaOH-impregnated Whatman 40 filter, 10-15 m^3/day	Daily	UV-fluorescence
Sulphur dioxide	RU16, RU18	NaOH-impregnated Whatman 40 filter, 10-15 m^3/day	Daily	Ion chromatography
Nitrogen dioxide				
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman 40 filter, 10-15 m^3/day	Daily	Ion chromatography
Nitrate	All	Whatman 40 filter, 10-15 m^3/day	Daily	Ion chromatography
Ammonium	All	Whatman 40 filter, 10-15 m^3/day	Daily	Ion chromatography
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Serbia and Montenegro**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Bulk	Daily	
Precipitation amount, official gauge				
Sulphate	All	Bulk	Daily	Thorin
Nitrate	All	Bulk	Daily	Spectrophotometric, Griess method, Cd reduction
Ammonium	All	Bulk	Daily	Spectrophotometric, Indophenol method
Magnesium	All	Bulk	Daily	Atomic absorption method
Sodium	All	Bulk	Daily	Atomic absorption method
Chloride	All	Bulk	Daily	Spectrophotometric, mercury thiocyanate/iron method
Calcium	All	Bulk	Daily	Atomic absorption method
Potassium	All	Bulk	Daily	Atomic absorption method
Conductivity	All	Bulk	Daily	Conductivity meter
pH	All	Bulk	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	Absorbing solution TCM, 1.6-2.5 m^3/day	Daily	Pararosanilin method
Nitrogen dioxide	All	Absorbing solution TGS, 1.6-2.5 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone				
Sulphate				
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				

Country: **Slovakia**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Ion chromatography
Nitrate	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Ion chromatography
Ammonium	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Ion chromatography
Magnesium	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Ion chromatography
Sodium	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Ion chromatography
Chloride	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Ion chromatography
Calcium	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Ion chromatography
Potassium	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Ion chromatography
Conductivity	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	Conductivity meter
pH	All	SK02: Bulk, SK04, SK05, SK06, SK07: Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 41 filter, 6-8 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	Absorbing solution NaOH and guajacol, 0.5 m^3/day	Daily	Spectrophotometric, Modified Salzman method
Nitric acid	All	KOH-impregnated Whatman 41 filter, 6-8 m^3/day	Daily	Ion chromatography
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman 40 filter, 6-8 m^3/day	Daily	Capillary electrophoresis
Nitrate	All	Whatman 40 filter, 6-8 m^3/day	Daily	Capillary electrophoresis
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	SK04	Partisol R&P, Sartorius nitrocellulose filter, 24 m^3/day	weekly	Gravimetric method
$PM_{2.5}$				
Suspended particulate matter	All	Sartorius nitrocellulose filter, 8-10 m^3/day	weekly	Gravimetric method
Sum of nitric acid and nitrate	All	KOH-impregnated Whatman 41 filter/ Whatman 40 filter, 6-8 m^3/day	Daily	Ion chromatography / Capillary electrophoresis
Sum of ammonia and ammonium				
Acidity				

Country: **Slovenia**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount				
Precipitation amount, official gauge				
Sulphate				
Nitrate				
Ammonium				
Magnesium				
Sodium				
Chloride				
Calcium				
Potassium				
Conductivity				
pH				
Acidity				
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 40 filter, 17-23 m^3/day	Daily	Ion chromatography
Nitrogen dioxide				
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Teflon filter, Gelman Zefluor 2 μm, 17-23 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	All	Teflon filter, Gelman Zefluor 2 μm + KOH impregnated Whatman 40 filter, 17-23 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	All	Teflon filter, Gelman Zefluor 2 μm + oxalic acid impregnated Whatman 40 filter, 17-23 m^3/day	Daily	Ion chromatography
Acidity				

Country: **Spain**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Daily	Ion chromatography
Nitrate	All	Wet-only	Daily	Ion chromatography
Ammonium	All	Wet-only	Daily	Spectrophotometric, Indophenol method
Magnesium	All	Wet-only	Daily	Atomic absorption method + addition of lanthanum
Sodium	All	Wet-only	Daily	Atomic emission method + addition of caesium
Chloride	All	Wet-only	Daily	Ion chromatography
Calcium	All	Wet-only	Daily	Atomic absorption method + addition of lanthanum
Potassium	All	Wet-only	Daily	Atomic emission method + addition of caesium
Conductivity	All	Wet-only	Daily	Conductivity meter
pH	All	Wet-only	Daily	pH meter
Acidity	All	Wet-only	Daily	Calculated from pH
Air				
Sulphur dioxide	All	Instrumental: UV-fluorescence	Hourly	
Nitrogen dioxide	All	Instrumental: Chemiluminescence	Hourly	
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman GF/A filter, 770 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium		Till 31/12/2001		
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	All	From 03/2001	Daily	Gravimetric method
$PM_{2.5}$	All	From 03/2001	Daily	Gravimetric method
Suspended particulate matter	All	Still being measured	Daily	Gravimetric method
Sum of nitric acid and nitrate	All	NaOH impregnated Whatman 40 filter, 35 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	All	Oxalic acid impregnated Whatman 40 filter, 35 m^3/day	Daily	Spectrophotometric, Indophenol method
Acidity		Till 31/12/2001		

Country: **Sweden**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Weekly except SE02; daily at SE02	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Weekly except SE02; daily at SE02	Ion chromatography
Nitrate	All	Wet-only	Weekly except SE02; daily at SE02	Ion chromatography
Ammonium	All	Wet-only	Weekly except SE02; daily at SE02	Spectrophotometric, Flow injection analysis
Magnesium	All	Wet-only	Weekly except SE02; daily at SE02	Ion chromatography
Sodium	All	Wet-only	Weekly except SE02; daily at SE02	Ion chromatography
Chloride	All	Wet-only	Weekly except SE02; daily at SE02	Ion chromatography
Calcium	All	Wet-only	Weekly except SE02; daily at SE02	Ion chromatography
Potassium	All	Wet-only	Weekly except SE02; daily at SE02	Ion chromatography
Conductivity	All	Wet-only	Weekly except SE02; daily at SE02	Conductivity meter
pH	All	Wet-only	Weekly except SE02; daily at SE02	pH meter
Acidity				
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 40 filter, 20 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	NaI-impregnated glass sinters, ~0.7 m^3/day	Daily	Spectrophotometric, Flow Injection Analysis
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	All	Teflon filter, Gelman Zefluor 2 μm, 20 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}		TEOM (Tapered Element Oscillating Microbalance	Hourly	TEOM
$PM_{2.5}$		TEOM (Tapered Element Oscillating Microbalance	Hourly	TEOM
Suspended particulate matter	All	Black smoke on Whatman-filter	Daily	Reflectance
Sum of nitric acid and nitrate	All except SE08	Aerosol filter as for sulphate + KOH-impregnated Whatman 40 filter, 20 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	All except SE08	Aerosol filter as for sulphate + Oxalic acid impregnated Whatman 40 filter, 20 m^3/day	Daily	Flow injection analysis
Acidity				

Country: **Switzerland**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily at CH02, CH05; weekly at CH04	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Nitrate	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Ammonium	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Magnesium	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Sodium	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Chloride	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Calcium	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Potassium	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Conductivity	All	Wet-only	Daily at CH02, CH05; weekly at CH04	Conductivity meter
pH	All	Wet-only	Daily at CH02, CH05; weekly at CH04	pH meter
Acidity				
Air				
Sulphur dioxide	CH01	Absorbing solution H_2O_2, 4.1 m^3/day	Daily	Ion chromatography
Sulphur dioxide	CH02, CH04, CH05	Instrumental: UV-fluorescence	Daily	UV-fluorescence
Nitrogen dioxide	CH01	Chemiluminescence (Cranox)	Daily	Chemiluminescence (Cranox)
Nitrogen dioxide	CH02, CH03, CH04, CH05	Chemiluminescence	Daily	Chemiluminescence
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Hourly	UV-absorption
Sulphate	CH02, CH05	Schleicher & Schüll filter 589/4, 3.6 m^3/day (regularily checked against IC)	Daily	X-ray fluorescence (XRF)
Sulphate	CH01	Schleicher & Schüll filter 589/4, 4.1 m^3/day (regularily checked against IC)	Daily	X-ray fluorescence (XRF)
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	All		Daily	
$PM_{2.5}$	CH02, CH04		Daily	
Suspended particulate matter				
Sum of nitric acid and nitrate	CH05	NaOH impregnated Schleicher & Schüll 589/4 filter, 18 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	CH05	Citric acid impregnated Schleicher & Schüll 589/4 filter, 18 m^3/day	Daily	Ion chromatography
Acidity				

Country: **Turkey**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge				
Sulphate	All	Wet-only	Daily	Ion chromatography
Nitrate	All	Wet-only	Daily	Ion chromatography
Ammonium	All	Wet-only	Daily	Spectrophotometric, Indophenol method
Magnesium	All	Wet-only	Daily	Atomic absorption method
Sodium	All	Wet-only	Daily	Atomic absorption method
Chloride	All	Wet-only	Daily	Ion chromatography
Calcium	All	Wet-only	Daily	Atomic absorption method
Potassium	All	Wet-only	Daily	Atomic absorption method
Conductivity	All	Wet-only	Daily	Conductivity meter
pH	All	Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	All	KOH-impregnated Whatman 40 filter, 27 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	NaI-impregnated glass sinters, 0.72 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone				
Sulphate	All	Teflon filter, Gelman Zefluor 2 μm, 27 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	All	KOH-impregnated Whatman 40 filter, Teflon filter, Gelman Zeflour 2 μm, 27 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	All	Citric acid impregnated Whatman 40 filter, Teflon filter, Gelman Zeflour 2 μm, 27 m^3/day	Daily	Spectrophotometric, Indophenol method
Acidity				

Country: **United Kingdom**		Main components and ozone - EMEP	Year: 2002	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount		Bulk collector	Weekly then fortnightly	
Precipitation amount, official gauge				
Sulphate		Bulk collector	Weekly then fortnightly	Ion chromatography
Nitrate		Bulk collector	Weekly then fortnightly	Ion chromatography
Ammonium		Bulk collector	Weekly then fortnightly	Ion chromatography
Magnesium		Bulk collector	Weekly then fortnightly	Ion chromatography
Sodium		Bulk collector	Weekly then fortnightly	Ion chromatography
Chloride		Bulk collector	Weekly then fortnightly	Ion chromatography
Calcium		Bulk collector	Weekly then fortnightly	Ion chromatography
Potassium		Bulk collector	Weekly then fortnightly	Ion chromatography
Conductivity		Bulk collector	Weekly then fortnightly	Conductivity meter
pH		Bulk collector	Weekly then fortnightly	pH meter
Acidity				
Air				
Sulphur dioxide		Filter pack	Fortnightly	Ion chromatography
Nitrogen dioxide		Automatic monitor	Hourly	Chemiluminescence
Nitric acid		Note 1		
Ammonia		Note 1		
Ozone		UV-monitor	Hourly	UV-absorption
Sulphate		Whatman 41 filter, 1.1 m^3/day	Daily	Ion chromatography
Nitrate		Note 1	Monthly	
Ammonium		Note 1	Monthly	
Sodium		Note 1	Monthly	
Calcium		Note 1	Monthly	
Magnesium		Note 1	Monthly	
Potassium		Note 1	Monthly	
Chloride		Note 1	Monthly	
PM_{10}				
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate	GB02	Note 2		
Sum of ammonia and ammonium	GB02	Note 2		
Acidity				

Note 1 These constituents of aerosol and gaseous species are made a number of sites in the UK The concentrations have not yet been reported. Should the UK report them this year?
Note 2 The TIN TIA measurements were discontinued before 2001

Annex 5

List of data reports

Data Report October 1977-September 1978.
EMEP/CCC-Report 3/80 by J. Schaug, H. Dovland, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1980.

Data Report October 1978-September 1979.
EMEP/CCC-Report 4/81 by J.E. Skjelmoen, H. Dovland, J. Schaug.
Lillestrøm, Norwegian Institute for Air Research, 1981.

Data Report October 1979-September 1980.
EMEP/CCC-Report 5/84 by J.E. Skjelmoen, J. Schaug.
Lillestrøm, Norwegian Institute for Air Research, 1984.

Data Report October 1980-September 1981.
EMEP/CCC-Report 6/84 by J.E. Skjelmoen, J. Schaug.
Lillestrøm, Norwegian Institute for Air Research, 1984.

Data Report October 1981-September 1982.
EMEP/CCC-Report 2/85 by K. Nodop, J.E. Skjelmoen, J. Schaug.
Lillestrøm, Norwegian Institute for Air Research, 1985.

Data Report October 1982-December 1982.
EMEP/CCC-Report 4/86 by J. Schaug, A. Harstad, T. Krognes, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1986.

Data Report January 1983-December 1983.
EMEP/CCC-Report 5/86 by J. Schaug, A. Harstad, T. Krognes, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1986.

Data Report January 1984-June 1984.
EMEP/CCC-Report 1/87 by J. Schaug, J. Pacyna, A. Harstad, T. Krognes,
J.E. Skjelmoen.
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Data Report July 1984-December 1984.
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J.E. Skjelmoen.
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EMEP/CCC-Report 6/87 by J. Pacyna, J. Schaug, A. Harstad, T. Krognes,
J.E. Skjelmoen
Lillestrøm, Norwegian Institute for Air Research, 1987.

European Precipitation Chemistry Atlas.
An Atlas of monthly and seasonal maps of precipitation amount, non-marine sulphate, nitrate, ammonium and hydrogen ion concentrations and depositions based on the EMEP precipitation network: October 1977 to September 1982.
EMEP/CCC-Report 5/88 by R.J. Barthelmie, T.D. Davies, G. Farmer, J. Schaug.
Norwich/Lillestrøm, Climatic Research Unit, University of East Anglia/ Norwegian Institute for Air Research, 1988.

Data Report 1986. Part 1: Annual summaries.
EMEP/CCC-Report 6/88 by J. Schaug, J.E. Skjelmoen, S.E. Walker, A. Harstad, K. Nodop, J. Pacyna
Lillestrøm, Norwegian Institute for Air Research, 1988.

Data Report 1986. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 7/88 by J. Schaug, J.E. Skjelmoen, S.E. Walker, A. Harstad, K. Nodop, J. Pacyna
Lillestrøm, Norwegian Institute for Air Research, 1988.

Data Report 1987. Part 1: Annual summaries.
EMEP/CCC-report 1/89 by J. Schaug, J.E. Skjelmoen, S.-E. Walker, U. Pedersen, A. Harstad
Lillestrøm, Norwegian Institute for Air Research, 1989.

Data Report 1987. Part 2: Monthly and seasonal summaries.
EMEP/CCC-Report 2/89 by J. Schaug, J.E. Skjelmoen, S.E. Walker, U. Pedersen, A. Harstad.
Lillestrøm, Norwegian Institute for Air Research, 1989.

Ozone measurements January-December 1985.
EMEP/CCC-Report 3/89 by U. Feister, U. Pedersen.
Potsdam/Lillestrøm, Meteorological Service of the GDR/Norwegian Institute for Air Research, 1989.

Data Report 1988. Part 1: Annual summaries.
EMEP/CCC-Report 4/90 by U. Pedersen, J. Schaug, J.E. Skjelmoen, J.E. Hanssen.
Lillestrøm, Norwegian Institute for Air Research, 1990.

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EMEP/CCC-Report 5/90 by J. Schaug, U. Pedersen, J.E. Skjelmoen, J.E. Hanssen.
Lillestrøm, Norwegian Institute for Air Research, 1990.

European Precipitation Chemistry Atlas (Volume 2).
An Atlas of monthly and seasonal maps of precipitation amount, non-marine sulphate, nitrate, ammonium and hydrogen ion concentrations and depositions based on the EMEP precipitation network: October 1982 to December 1985.
EMEP/CCC-Report 6/90 by T.D. Davies, R.J. Barthelmie, M. Varley, S. Dorling, G. Farmer, J. Schaug.
Norwich/Lillestrøm, Climatic Research Unit, University of East Anglia/Norwegian Institute for Air Research, 1990.

Ozone measurements January-December 1986.
EMEP/CCC-Report 8/90 by U. Feister, U. Pedersen, E. Schulz, S. Hechler.
Potsdam/Lillestrøm, Meteorological Service of the GDR/Norwegian Institute for Air Research, 1990.

Data Report 1989. Part 1: Annual summaries.
EMEP/CCC-Report 2/91 by J. Schaug, U. Pedersen, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1991.

Data Report 1989. Part 2: Monthly and seasonal summaries.
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EMEP/CCC-Report 2/92 by U. Pedersen, J. Schaug, J.E. Skjelmoen.
Lillestrøm, Norwegian Institute for Air Research, 1992.

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Annex 6

Description of statistical calculation procedures

The geometric standard deviation is a dimensionless factor. If the data come from a random sample of independent data in a normal distribution, about 95% of the data will lie between

$$\overline{c_a} - 2sd_a \; and \; \overline{c_a} + 2sd_a$$

and between

$$\frac{\overline{c_g}}{sd_g^2} \; and \; \overline{c_g} \cdot sd_g^2$$

if the data come from a lognormal distribution.

In the computations of mean values and other statistics, the concentrations below the detection limit have been set equal to one half of the actual limit. An overview of the statistics and definitions is given below.

W.mean $\hat{c}$ is the precipitation weighted arithmetic mean concentration used for precipitation components:

$$\hat{c} = \frac{1}{\sum_i p_i} \cdot \sum_i c_i \cdot p_i$$

where p_i is precipitation amount day i with the measured concentration c_i of a specific component.

Arit mean $\overline{c_a}$ is the arithmetic mean value used for air components only, and N is number of days with data:

$$\overline{c_a} = \frac{1}{N} \sum_i c_i$$

Arit sd sd_a is the arithmetic standard deviation from the arithmetic mean value. It is computed for air components only:

$$sd_a = \left(\frac{\sum_i \left(c_i - \overline{c_a} \right)^2}{N - 1} \right)^{\frac{1}{2}}$$

Geom mean $\overline{c_g}$ is the geometric mean value used for air components only, and it is computed from the arithmetic mean of ln c:

$$\overline{lnc} = \frac{1}{N} \cdot \sum_i lnc_i$$

$$\overline{c_g} = exp\left(\overline{lnc}\right)$$

Geom sd — sd_g is the geometric standard deviation from the geometric mean value. It is computed for air components only, and it is based on the standard deviation of ln c:

$$sdlnc = \left(\frac{\sum_i \left(lnc_i - \overline{lnc} \right)^2}{N - 1} \right)^{\frac{1}{2}}$$

$$sd_g = exp\left(sdlnc \right)$$

Min — is the minimum value reported for a specific component, and it is printed both for precipitation and air components.

5% — is the 5 percentile computed from the histogram of the daily results. The data have been divided into 30 classes of equal size with the addition of two extreme classes. The 5 percentile has been computed by linear interpolation of the two closest class marks. The percentile has been computed for air components only.

50% — is the 50 percentile, defined as above and computed for air data only.

95% — is the 95 percentile, defined as above and computed for air data only.

Max — is the maximum value reported for a specific component, and it is given for precipitation and air components.

Dep — is the wet deposition of a specific precipitation component. The deposition is the product of the total precipitation amount measured and the weighted arithmetic mean of a component measured at a site.

% anal — for precipitation components this is the percent of the total precipitation reported analysed for a specific component, and for air components based on the number of days with data.

Num bel — is the number of data below the detection limit (not used for precipitation amount).

Num day — is the number of days with measurements for a specific component.

Annex 7

EMEP Data Quality Objectives (DQO)

10 % accuracy or better for oxidized sulphur and oxidized nitrogen in single analysis in the laboratory,

15 % accuracy or better for other components in the laboratory,

0.1 units for pH,

15–25 % uncertainty for the combined sampling and chemical analysis (components to be specified later),

90 % data completeness of the daily values.

The targets, with respect to accuracy in the laboratory, for the very lowest concentrations of the main components in precipitation follow the WMO GAW (1992) recommendations for regional stations:

	Accuracy	
SO_4^{2-}	0.032 mg S/l	(1 µmol/l)
NO_3^-	0.014 mg N/l	(1 µmol/l)
NH_4^+	0.028 mg N/l	(2 µmol/l)
Cl^-	0.107 mg Cl/l	(3 µmol/l)
Ca^{2+}	0.012 mg Ca/l	(0.3 µmol/l)
K^+	0.012 mg K/l	(0.3 µmol/l)
Mg^{2+}	0.007 mg Mg/l	(0.3 µmol/l)
Na^+	0.007 mg Na/l	(0.3 µmol/l)

The targets for the wet analysis of components extracted from air filters are the same as for precipitation. For SO_2 the limit above for sulphate is valid for the medium volume method with impregnated filter. For NO_2 determined as NO_2^- in solution the accuracy for the lowest concentrations is 0.01 mg N/l.

The aim for data completeness is valid for the current definition used by the CCC. This definition will, however, be harmonised with the WMO GAW definition and modified.

It is understood that there is a need to investigate additional uncertainty caused by local influence on the measurements at the sites (not representative siting).