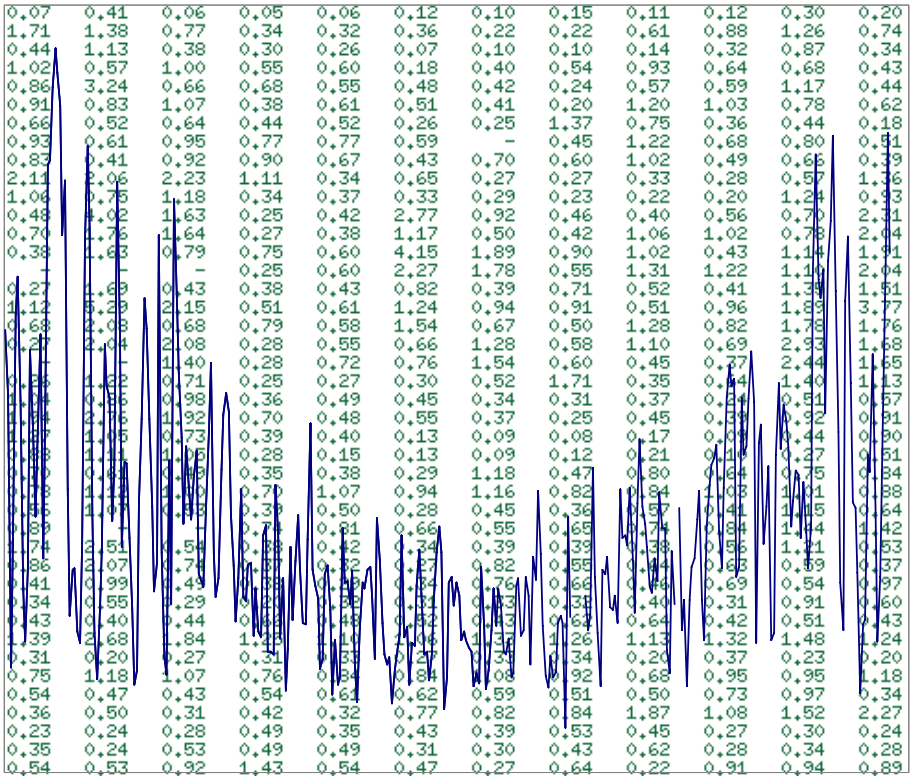
EMEP/CCC-Report 3/2005

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

Data Report 2003

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 2003 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 88 stations and air data from 102 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 2003.

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	133
	FR0016R	Le Casset	45º39'N	6º31'E	1750
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
Greece	GR0001R	Aliartos	38º22'N	23º5'E	110
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
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	51º49'N	21º59'E	180
	PL0003R	Sniezka	50º44'N	15º44'E	1604
	PL0004R	Leba	54º45'N	17º32'E	2
	PL0005R	Diabla Gora	54º09'N	22º04'E	157
Portugal	PT0001R	Braganca	41º49'N	6º46'W	691
	PT0003R	Viana do Castelo	41º42'N	8º48'W	16
	PT0004R	Monte Velho	38º05'N	8º48'W	43
Russian Federation	RU0001R	Janiskoski	68º56'N	28º51'E	118
	RU0013R	Pinega	64º42'N	43º24'E	28
	RU0016R	Shepeljovo	59º58'N	29º07'E	4
	RU0018R	Danki	54º54'N	37º48'E	150
Serbia and Montenegro	CS0005R	Kamenicki vis	43º24'N	21º57'E	813
Slovenia	SI0008R	Iskrba	45º34'N	14º52'E	520
Slovakia	SK0002R	Chopok	48º56'N	19º35'E	2008
	SK0004R	Stará Lesná	49º09'N	20º17'E	808
	SK0005R	Liesek	49º22'N	19º41'E	892
	SK0006R	Starina	49º03'N	22º16'E	345
	SK0007R	Topolniky	47º57'N	17º51'E	113
Spain	ES0007R	Viznar	37º14'N	3º32'W	1265
	ES0008R	Niembro	43º27'N	4º51'W	134
	ES0009R	Campisabolos	41º17'N	3º9'W	1360
	ES0010R	Cabo de Creus	42º19'N	3º19'E	23
	ES0011R	Barcarrola	38º29'N	6º55'W	393
	ES0012R	Zarra	39º5'N	1º6'W	885
	ES0013R	Penausende	41º17'N	5º52'W	985
	ES0014R	Els Torms	41º24'N	0º43'E	470
	ES0015R	Risco Llamo	39º31'N	4º21'W	1241
	ES0016R	O Saviñao	43º13'N	7º41'W	506
Sweden	SE0005R	Bredkälen	63º51'N	15º20'E	404
	SE0008R	Hoburgen	56º55'N	18º09'E	58
	SE0011R	Vavihill	56º01'N	13º09'E	172
	SE0014R	Råö	57º24'N	11º55'E	5
	SE0012R	Aspvreten	58º48'N	17º23'E	20
	SE0035R	Vindeln	64º15'N	19º46'E	225
Switzerland	CH0001G	Jungfraujoch	46º33'N	7º59'E	3573
	CH0002R	Payerne	46º48'N	6º57'E	510
	CH0003R	Tänikon	47º29'N	8º54'E	540
	CH0004R	Chaumont	47º03'N	6º59'E	1130
	CH0005R	Rigi	47º04'N	8º28'E	1030
Turkey	TR0001R	Cubuk II	40º30'N	33º00'E	1169
United Kingdom	GB0002R	Eskdalemuir	55º19'N	3º12'W	243
	GB0006R	Lough Navar	54º26'N	7º54'W	126
	GB0007R	Barcombe Mills	50º52'N	0º02'W	8
	GB0013R	Yarner Wood	50º36'N	3º43'W	119
	GB0014R	High Muffles	54º20'N	0º48'W	267
	GB0015R	Strath Vaich Dam	57º44'N	4º46'W	270
	GB0036R	Harwell	51º34'N	1º18'W	137
	GB0037R	Ladybower Res.	53º23'N	1º45'W	420
	GB0038R	Lullington Heath	50º47'N	0º10'W	120
	GB0043R	Narberth	51º14'N	4º42'W	160
	GB0045R	Wicken Fen	52º18'N	0º18'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.

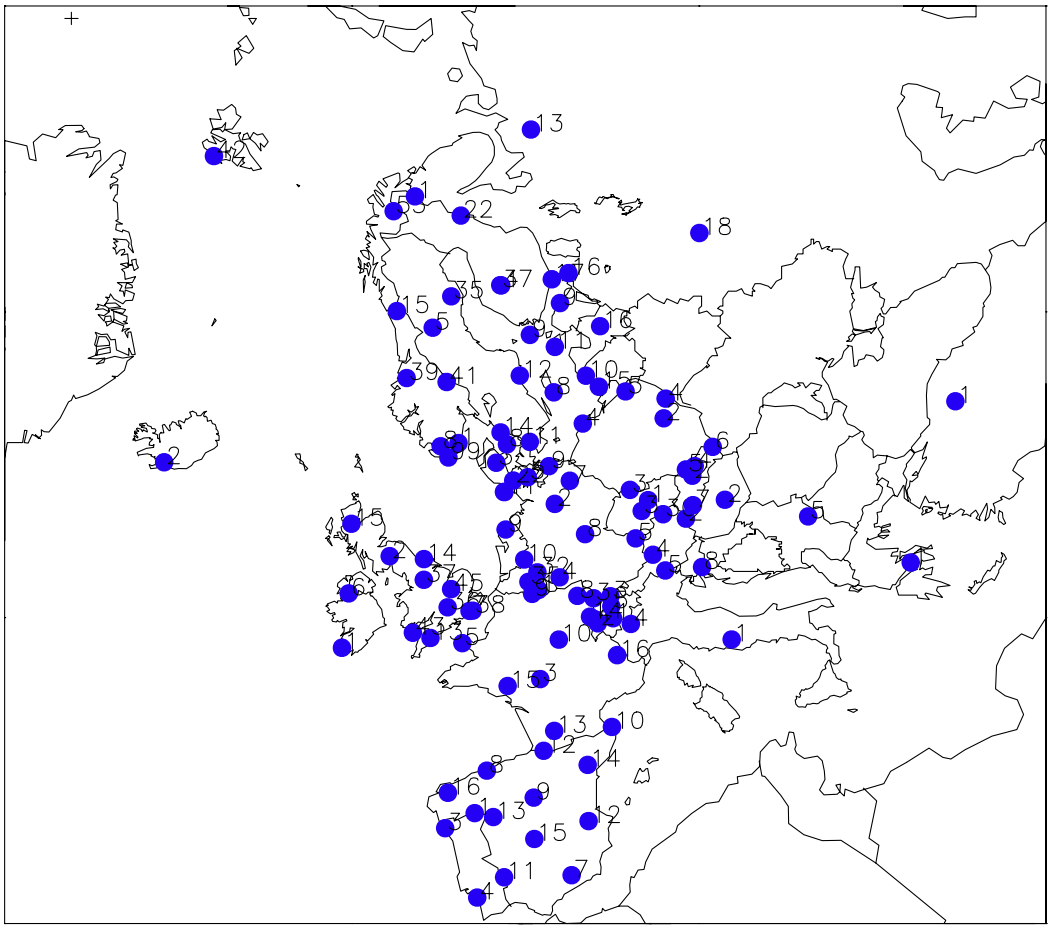

Figure 1: Location of the EMEP monitoring stations in operation in 2003. Sites with ozone/VOC measurements only are not included.

4. The measurement programme during 2003

EMEP's measurement programme during 2003 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 2003.

	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 2003 have been reported separately by Solberg et al. (2005), while ozone data from 2003 have been reported by Hjellbrekke and Solberg (2005). Heavy metals and POPs were reported by Aas and Breivik (2005).

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 (EMEP, 1996 – revised 2001). The latest 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 2003 the 21st 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. (2004).

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 2003.

Code	mm	mm off	pH	SO_4	XSO_4	NH_4	NO_3	Na	Mg	Cl	Ca	K	cond
AT0002R	281.8	-	5.22	0.72	0.71	0.92	0.59	0.13	0.104	0.23	0.97	0.08	20
AT0004R	1034.5	-	5.48	0.53	0.38	0.70	0.44	2.18	0.058	2.16	0.41	0.13	24
AT0005R	791.6	-	5.29	0.32	0.30	0.45	0.31	0.09	0.063	0.12	0.69	0.05	11
BY0004R	432.3	-	5.86	1.65	1.33	0.67	0.64	1.12	0.447	1.84	2.56	2.62	40
CH0002R	620.6	-	5.51	0.28	0.28	0.53	0.31	0.09	0.032	0.16	0.39	0.05	10
CH0004R	784.9	-	5.27	0.29	0.28	0.37	0.29	0.12	0.033	0.21	0.36	0.04	10
CH0005R	1023.9	-	5.20	0.35	0.34	0.62	0.37	0.07	0.025	0.11	0.31	0.05	12
CS0005R	473.1	-	5.30	0.82	0.78	1.99	0.27	0.40	0.228	0.36	1.74	1.15	28
CZ0001R	649.1	-	4.81	0.68	0.67	0.58	0.45	0.12	0.042	0.21	0.30	0.07	18
CZ0003R	471.9	-	4.93	0.60	0.58	0.72	0.50	0.23	0.053	0.46	0.32	0.18	20
DE0001R	585.7	-	4.76	0.86	0.53	0.73	0.62	4.07	0.493	6.91	0.34	0.16	35
DE0002R	424.5	-	4.86	0.48	0.44	0.64	0.53	0.38	0.060	0.64	0.22	0.07	17
DE0003R	1376.9	-	4.89	0.35	0.34	0.41	0.35	0.15	0.034	0.28	0.23	0.04	11
DE0004R	640.4	-	5.08	0.41	0.39	0.52	0.44	0.25	0.049	0.46	0.37	0.07	13
DE0005R	611	-	5.20	0.56	0.55	0.80	0.61	0.17	0.074	0.26	0.58	0.14	14
DE0007R	375.8	-	4.71	0.58	0.55	0.71	0.59	0.31	0.063	0.58	0.25	0.10	17
DE0008R	852.9	-	4.75	0.47	0.45	0.56	0.52	0.29	0.046	0.47	0.22	0.06	15
DE0009R	523.5	-	4.79	0.56	0.50	0.57	0.50	0.69	0.104	1.21	0.33	0.08	17
DK0005R	390	-	4.96	0.59	0.49	0.74	0.61	1.24	0.164	2.06	0.39	0.23	23
DK0008R	546.4	-	4.67	0.59	0.43	0.50	0.54	1.76	0.304	4.57	0.18	0.13	33
DK0022R	673.3	-	4.83	0.49	0.38	0.53	0.47	1.39	0.140	2.40	0.12	0.07	22
EE0009R	723.9	-	4.80	0.38	0.36	0.13	0.21	0.17	0.033	0.40	0.25	0.06	10
EE0011R	416.7	-	4.85	0.60	0.54	0.34	0.42	0.56	0.127	1.37	0.44	0.12	17
ES0007R	615	-	6.24	0.49	0.43	0.18	0.29	0.41	0.174	0.92	0.92	0.12	13
ES0008R	673	-	4.98	1.39	0.87	0.56	0.68	6.83	0.719	9.89	1.01	0.37	57
ES0009R	599.1	-	5.79	0.44	0.39	0.18	0.37	0.38	0.077	0.89	0.81	0.11	12
ES0011R	695.3	-	6.51	0.53	0.44	0.12	0.27	0.91	0.644	1.63	1.70	0.25	21
ES0012R	295	-	6.36	0.79	0.71	0.27	0.79	0.78	0.344	1.24	3.31	0.20	28
ES0013R	457.1	-	6.05	0.43	0.40	0.13	0.33	0.31	0.073	0.80	0.72	0.18	10
ES0014R	433.4	-	6.28	0.85	0.79	0.35	0.57	0.49	0.249	1.15	2.04	0.22	25
ES0015R	428.8	-	5.68	0.62	0.56	0.51	0.36	0.57	0.110	1.07	0.70	0.15	16
ES0016R	943.6	-	6.05	0.54	0.47	0.31	0.27	0.78	0.206	1.40	0.66	0.20	16
FI0004R	548.8	-	4.73	0.27	0.26	0.17	0.22	0.07	0.018	0.13	0.08	0.05	11
FI0009R	245.3	-	4.55	0.41	0.35	0.30	0.39	0.79	0.096	1.39	0.13	0.12	21
FI0017R	587.9	-	4.63	0.42	0.41	0.24	0.28	0.15	0.033	0.28	0.15	0.08	15
FI0022R	396.8	-	4.73	0.20	0.19	0.09	0.15	0.07	0.011	0.12	0.04	0.03	10
FR0003R	338.9	-	5.63	0.40	0.34	0.46	0.34	0.64	0.116	1.02	0.64	0.08	13
FR0005R	245	-	5.14	0.50	0.24	0.29	0.24	3.05	0.406	5.41	0.30	0.12	30
FR0008R	1037.3	-	4.85	0.34	0.32	0.40	0.35	0.26	0.038	0.44	0.19	0.03	13
FR0009R	950.7	-	4.99	0.40	0.36	0.50	0.38	0.52	0.073	0.86	0.26	0.04	14
FR0010R	764	-	5.13	0.27	0.24	0.28	0.23	0.36	0.047	0.58	0.20	0.13	10
FR0012R	1470	-	5.06	0.36	0.32	0.27	0.21	0.53	0.085	0.90	0.48	0.05	13
FR0013R	764.7	-	5.05	0.42	0.36	0.32	0.25	0.75	0.109	1.26	0.47	0.05	15
FR0014R	903.1	-	5.12	0.37	0.36	0.49	0.35	0.19	0.040	0.31	0.45	0.05	12
FR0015R	831.5	-	5.11	0.40	0.30	0.34	0.20	1.22	0.165	2.14	0.38	0.06	17
FR0016R	600.1	-	5.40	0.38	0.37	0.23	0.24	0.09	0.074	0.20	1.80	0.18	13
GB0002R	969.8	-	4.86	0.37	0.25	0.26	0.21	1.43	0.158	2.45	0.13	0.09	17
GB0006R	874.1	-	5.21	0.48	0.17	0.11	0.10	3.81	0.435	6.70	0.27	0.15	29
GB0013R	586.7	-	4.63	0.54	0.33	0.28	0.27	2.52	0.294	4.27	0.20	0.12	27
GB0014R	628.6	-	4.64	0.84	0.66	0.57	0.49	2.28	0.279	4.03	0.40	0.13	33
GB0015R	1060.9	-	4.93	0.49	0.10	0.05	0.10	5.51	0.537	9.61	0.20	0.20	37
HU0002R	244.7	357.1	5.94	0.98	0.87	0.53	0.48	1.22	0.321	0.88	1.21	0.20	27
IE0001R	1366.2	1498.5	5.28	0.75	0.23	0.27	0.14	6.22	0.806	11.17	0.41	0.46	50
IS0002R	1960.1	-	5.45	0.38	0.11	-	-	3.23	-	-	-	-	-
IT0001R	526.5	-	5.86	2.32	2.11	0.69	2.79	2.48	0.433	3.94	2.88	0.64	35
IT0004R	1139.1	-	4.76	0.53	0.51	0.74	0.60	0.21	0.062	0.37	0.59	0.12	18

Table 3, cont.

Code	mm	mm off	pH	SO_4	XSO_4	NH_4	NO_3	Na	Mg	Cl	Ca	K	cond
LT0015R	488.3	-	4.80	0.56	0.44	0.35	0.46	1.49	-	2.35	0.59	0.17	23
LV0010R	717.1	-	4.73	0.54	0.48	0.50	0.49	0.68	0.113	1.31	0.28	0.09	21
LV0016R	639.4	-	5.43	0.38	0.35	0.47	0.28	0.39	0.141	0.47	0.47	0.14	14
NL0009R	616.9	-	5.42	0.64	0.41	0.67	0.41	2.53	0.308	5.01	0.36	0.20	30
NO0001R	1374.5	-	4.59	0.53	0.46	0.47	0.50	0.88	0.111	1.52	0.12	0.08	23
NO0008R	2114.6	-	4.89	0.33	0.24	0.28	0.26	1.16	0.145	2.08	0.14	0.16	17
NO0015R	1512.8	-	5.32	0.24	0.07	0.18	0.07	2.02	0.258	3.56	0.16	0.16	17
NO0039R	1664.3	-	5.19	0.24	0.09	0.12	0.08	1.82	0.233	3.31	0.12	0.09	16
NO0041R	660.8	-	4.87	0.22	0.20	0.20	0.22	0.14	0.023	0.23	0.09	0.09	10
NO0055R	307	-	5.12	0.23	0.18	0.18	0.14	0.54	0.066	1.00	0.12	0.22	9
NO0099R	469.9	-	4.70	2.03	0.58	0.85	0.83	17.45	2.221	32.78	1.02	0.80	121
PL0002R	438.9	-	4.80	0.72	0.70	0.78	0.47	0.15	0.042	0.41	0.27	0.11	20
PL0003R	755.7	-	4.63	0.85	0.79	0.46	1.04	0.73	0.178	0.86	0.87	0.26	28
PL0004R	568.9	-	4.71	0.52	0.45	0.46	0.42	0.85	0.112	1.59	0.21	0.10	22
PL0005R	571.4	580.2	4.79	0.47	0.45	0.44	0.35	0.19	0.045	0.45	0.20	0.12	13
PT0001R	-	844.6	5.75	0.29	0.26	0.23	0.19	0.28	0.140	0.43	0.62	0.11	10
PT0003R	-	1571.9	5.40	0.58	0.30	0.14	0.24	3.51	0.467	5.00	0.61	0.16	27
PT0004R	-	575.5	5.30	0.67	0.25	0.08	0.16	5.47	0.674	9.85	0.50	0.19	37
RU0001R	438.9	-	4.78	0.46	0.40	0.17	0.09	1.13	0.088	1.39	0.28	0.56	18
RU0013R	460.6	-	5.01	0.49	0.43	0.24	0.10	0.80	0.149	1.09	0.55	0.42	17
RU0016R	627.9	-	4.96	0.91	0.57	0.28	0.33	4.29	0.570	8.62	0.71	0.59	41
RU0018R	633.4	-	5.01	0.41	0.38	0.31	0.25	0.29	0.068	0.33	0.49	0.25	13
SE0005R	377.7	-	4.91	0.22	0.21	0.14	0.17	0.07	0.041	0.33	0.16	0.04	9
SE0011R	606.7	-	4.82	0.53	0.45	0.62	0.52	0.90	0.134	1.53	0.19	0.10	21
SE0014R	600.8	-	4.71	0.55	0.40	0.45	0.49	1.79	0.240	3.18	0.22	0.13	28
SI0008R	960	1135.8	4.81	0.44	0.42	0.32	0.33	0.26	0.057	0.45	0.30	0.04	15
SK0002R	840.3	-	4.57	0.93	0.90	0.59	0.43	0.29	0.054	0.36	0.36	0.26	24
SK0004R	530	-	4.71	0.87	0.84	0.78	0.42	0.27	0.066	0.36	0.41	0.34	25
SK0005R	633.9	-	4.57	0.92	0.89	0.55	0.52	0.32	0.065	0.55	0.46	0.37	25
SK0006R	572.6	-	4.57	0.90	0.88	0.65	0.54	0.29	0.058	0.39	0.49	0.31	24
SK0007R	367.2	-	4.85	0.85	0.83	0.60	0.47	0.27	0.086	0.35	0.62	0.29	21
TR0001R	257.9	-	5.67	1.19	1.12	0.48	0.38	0.86	0.146	1.22	2.09	0.30	25

Table 4: Annual averages of main components in air 2003.

Code	SO_2	NO_2	SO_4	XSO_4	SNO_3	NO_3	HNO_3	SNH_4	NH_4	NH_3
AT0002R	1.59	2.83	1.13	-	-	0.25	0.69	-	0.96	2.33
AT0004R	-	2.12	-	-	-	-	-	-	-	-
AT0005R	-	1.27	-	-	-	-	-	-	-	-
AT0030R	1.63	-	-	-	-	-	-	-	-	-
BE0001R	-	4.81	-	-	-	-	-	-	-	-
BE0032R	-	5.88	-	-	-	-	-	-	-	-
BE0035R	-	6.87	-	-	-	-	-	-	-	-
CH0001G	0.08	0.11	0.17	-	-	-	-	-	-	-
CH0002R	0.59	5.15	0.85	-	-	-	-	-	-	-
CH0003R	-	4.95	-	-	-	-	-	-	-	-
CH0004R	0.70	2.74	-	-	-	-	-	-	-	-
CH0005R	0.42	2.37	0.67	-	0.92	-	-	2.33	-	-
CS0005R	4.38	2.66	-	-	-	-	-	-	-	-
CZ0001R	1.80	2.64	-	-	0.94	-	-	1.98	-	-
CZ0003R	1.23	2.73	-	-	0.92	-	-	2.21	-	-
DE0001R	-	2.71	-	-	-	-	-	-	-	-
DE0002R	0.93	2.99	-	-	-	-	-	-	-	-
DE0003R	0.51	0.99	0.77	-	1.30	-	-	1.65	-	-
DE0004R	1.34	2.79	1.16	-	1.40	-	-	2.41	-	-
DE0005R	1.24	1.44	-	-	-	-	-	-	-	-
DE0007R	0.86	2.07	1.18	-	1.06	-	-	1.83	-	-
DE0008R	1.12	1.96	-	-	-	-	-	-	-	-
DE0009R	1.00	2.44	1.19	-	1.37	-	-	2.51	-	-
DE0041R	0.74	-	1.21	-	1.63	-	-	3.01	-	-
DK0003R	0.35	-	0.94	0.86	0.95	-	-	2.66	-	-
DK0005R	0.88	-	1.23	1.07	1.32	-	-	2.93	-	-
DK0008R	0.62	1.88	0.94	0.83	0.85	-	-	1.31	-	-
EE0009R	0.75	0.91	-	-	-	-	-	-	-	-
EE0011R	0.53	0.96	-	-	-	-	-	-	-	-
ES0007R	0.23	2.43	0.80	-	0.42	0.45	-	0.39	-	-
ES0008R	2.20	1.58	1.37	-	0.54	0.49	-	0.54	-	-
ES0009R	0.32	0.90	0.59	-	0.23	0.26	-	1.16	-	-
ES0010R	0.29	1.12	1.15	-	0.51	0.49	-	1.24	-	-
ES0011R	0.55	1.16	0.87	-	0.20	0.25	-	0.42	-	-
ES0012R	0.71	1.42	1.02	-	0.53	0.45	-	1.68	-	-
ES0013R	0.60	0.97	0.69	-	0.16	0.28	-	0.39	-	-
ES0014R	0.71	1.52	1.13	-	0.45	0.55	-	0.91	-	-
ES0015R	0.57	0.87	0.68	-	0.45	0.31	-	0.46	-	-
ES0016R	1.38	1.63	1.05	-	0.44	0.23	-	0.90	-	-
FI0009R	-	1.81	-	-	-	-	-	-	-	-
FI0017R	-	1.34	-	-	-	-	-	-	-	-
FI0022R	0.33	0.27	0.41	-	0.07	-	-	0.18	-	-
FI0037R	0.40	0.69	0.51	-	0.17	-	-	0.38	-	-
FR0003R	0.46	-	0.50	-	-	-	-	-	-	-
FR0005R	0.90	-	0.99	-	-	-	-	-	-	-
FR0008R	0.68	-	0.64	-	-	-	-	-	-	-
FR0009R	0.87	-	0.84	-	-	-	-	-	-	-
FR0010R	0.42	-	0.60	-	-	-	-	-	-	-
FR0012R	0.51	-	0.59	-	-	-	-	-	-	-
FR0013R	0.34	-	0.60	-	-	-	-	-	-	-
FR0014R	0.32	-	0.47	-	-	-	-	-	-	-
FR0015R	0.42	-	0.72	-	-	-	-	-	-	-
FR0016R	0.26	-	0.38	-	-	-	-	-	-	-

Table 4, cont.

Code	SO_2	NO_2	SO_4	XSO_4	SNO_3	NO_3	HNO_3	SNH_4	NH_4	NH_3
GB0002R	0.41	-	0.60	-	-	-	-	-	-	-
GB0006R	0.20	-	0.47	-	-	-	-	-	-	-
GB0007R	-	-	0.95	-	-	-	-	-	-	-
GB0013R	0.60	-	0.80	-	-	-	-	-	-	-
GB0014R	1.20	4.40	0.70	-	-	-	-	-	-	-
GB0015R	0.11	-	-	-	-	-	-	-	-	-
GB0036R	-	4.80	-	-	-	-	-	-	-	-
GB0037R	-	3.94	-	-	-	-	-	-	-	-
GB0038R	-	3.81	-	-	-	-	-	-	-	-
GB0043R	-	2.69	-	-	-	-	-	-	-	-
GB0045R	-	5.47	-	-	-	-	-	-	-	-
GR0001R	12.77	34.63	-	-	-	-	-	-	-	-
HU0002R	2.43	1.79	1.64	-	-	0.76	0.27	-	1.74	1.48
IE0001R	0.43	0.79	0.66	-	-	-	-	-	-	-
IS0002R	-	-	0.17	-	-	-	-	-	-	-
IT0004R	-	-	1.28	-	-	1.38	-	-	2.19	-
LT0015R	0.92	1.33	1.13	-	0.76	-	-	1.49	-	-
LV0010R	0.63	0.86	0.65	-	0.44	0.07	-	1.21	0.78	-
LV0016R	0.58	0.58	0.45	-	0.24	0.04	-	0.81	0.59	-
NL0009R	0.57	3.96	0.87	-	-	0.78	-	-	1.33	-
NL0010R	1.15	7.44	1.04	-	-	1.03	-	-	1.81	15.51
NO0001R	0.15	0.57	0.50	0.47	0.26	0.19	0.07	0.60	0.38	0.22
NO0008R	0.07	0.34	0.33	0.30	0.15	0.10	0.05	0.94	0.18	0.75
NO0015R	0.09	0.18	0.22	0.19	0.12	0.09	0.03	1.15	0.15	1.00
NO0039R	0.07	0.30	0.22	0.20	0.09	0.06	0.03	0.95	0.13	0.83
NO0041R	0.08	0.45	0.29	0.28	0.13	0.08	0.05	0.46	0.21	0.25
NO0042G	0.23	-	0.17	0.16	0.04	0.02	0.02	0.27	0.04	0.23
NO0055R	0.20	0.21	0.26	0.24	0.08	0.05	0.03	0.14	0.14	-
NO0056R	-	-	-	0.40	-	-	-	-	-	-
PL0002R	2.36	3.10	1.66	-	0.92	0.77	-	3.17	1.85	-
PL0003R	0.98	0.95	0.72	-	0.29	0.24	-	0.74	0.58	-
PL0004R	1.78	1.67	1.52	-	0.66	0.55	-	1.39	1.13	-
PL0005R	0.84	0.76	0.81	-	0.73	-	-	0.73	-	-
RU0001R	0.96	-	0.61	-	-	0.07	-	-	0.28	-
RU0016R	0.79	-	0.43	-	-	0.17	-	-	0.41	-
RU0018R	0.57	-	0.76	-	-	0.34	-	-	0.52	-
SE0005R	0.07	0.14	0.21	-	0.12	-	-	0.25	-	-
SE0008R	0.72	1.09	0.81	-	-	-	-	-	-	-
SE0011R	0.52	1.54	0.73	-	0.72	-	-	1.29	-	-
SE0014R	0.53	1.72	0.87	-	0.75	-	-	1.14	-	-
SI0008R	0.89	-	0.84	-	0.32	-	-	1.05	-	-
SK0002R	0.61	0.73	0.39	-	-	0.11	0.10	-	-	-
SK0004R	0.88	1.41	0.92	-	-	0.26	0.07	-	-	-
SK0005R	1.71	1.92	1.17	-	-	0.48	0.08	-	-	-
SK0006R	1.39	1.20	1.08	-	-	0.27	0.16	-	-	-
SK0007R	2.44	3.03	1.26	-	-	1.05	0.10	-	-	-
TR0001R	1.29	0.72	0.64	-	0.18	0.10	0.07	0.69	0.40	0.28

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

Code	Na	Ca	Mg	K	Cl
DK0003R	1.0	-	-	-	-
DK0005R	1.6	-	-	-	-
DK0008R	1.4	-	-	-	-
NL0009R	-	0.11	-	-	-
NO0001R	0.37	0.04	0.05	0.05	0.29
NO0008R	0.33	0.06	0.04	0.04	0.35
NO0015R	0.39	0.04	0.05	0.03	0.56
NO0039R	0.23	0.04	0.03	0.03	0.27
NO0041R	0.12	0.03	0.01	0.03	0.08
NO0042G	0.23	0.05	0.04	0.02	0.28
NO0055R	0.27	0.03	0.04	0.02	0.32

Table 6: Annual averages of particulate matter.

Code	PM_{10}	PM_{10}-$PM_{2.5}$	$PM_{2.5}$	PM_1	SPM
AT0002R	31.13	-	24.68	14.11	-
AT0004R	13.62	-	-	-	-
AT0005R	12.31	-	-	-	-
CH0001G	-	-	-	-	5.22
CH0002R	25.29	-	19.75	-	-
CH0003R	23.23	-	-	-	-
CH0004R	14.71	-	10.95	8.54	-
CH0005R	15.22	-	-	-	-
DE0002R	21.59	-	16.48	-	-
DE0003R	13.05	-	10.14	-	-
DE0004R	18.51	-	13.75	-	-
DE0005R	14.10	-	-	-	-
DE0007R	17.64	-	-	-	-
DE0008R	13.21	-	-	-	-
DE0009R	19.78	-	-	-	-
DE0041R	22.79	-	-	-	-
DK0005R	24.84	-	-	-	-
ES0007R	21.42	-	9.40	-	-
ES0008R	19.77	-	11.03	-	-
ES0009R	11.52	-	7.20	-	-
ES0010R	23.83	-	15.81	-	-
ES0011R	16.59	-	8.04	-	-
ES0012R	16.14	-	7.67	-	-
ES0013R	12.57	-	7.95	-	-
ES0014R	19.58	-	13.26	-	-
ES0015R	14.24	-	7.21	-	-
ES0016R	14.60	-	9.31	-	-
IT0001R	28.18	-	-	-	-
IT0004R	39.83	-	28.50	-	-
NO0001R	6.66	2.23	4.40	-	-
NO0099R	-	11.39	7.33	-	-
SE0005R	-	-	-	-	0.42
SE0008R	-	-	-	-	2.05
SE0011R	15.38	-	10.48	-	2.44
SE0012R	6.70	-	4.75	-	-
SE0014R	-	-	-	-	1.79
SE0035R	3.63	-	1.65	-	-

Table 6, cont.

Code	PM_{10}	PM_{10}-$PM_{2.5}$	$PM_{2.5}$	PM_1	SPM
SI0008R	21.3	-	-	-	-
SK0002R	-	-	-	-	9.98
SK0004R	15.73	-	-	-	-
SK0005R	23.26	-	-	-	-
SK0006R	21.64	-	-	-	-
SK0007R	-	-	-	-	32.00

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 26 May, 2005.

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.

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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

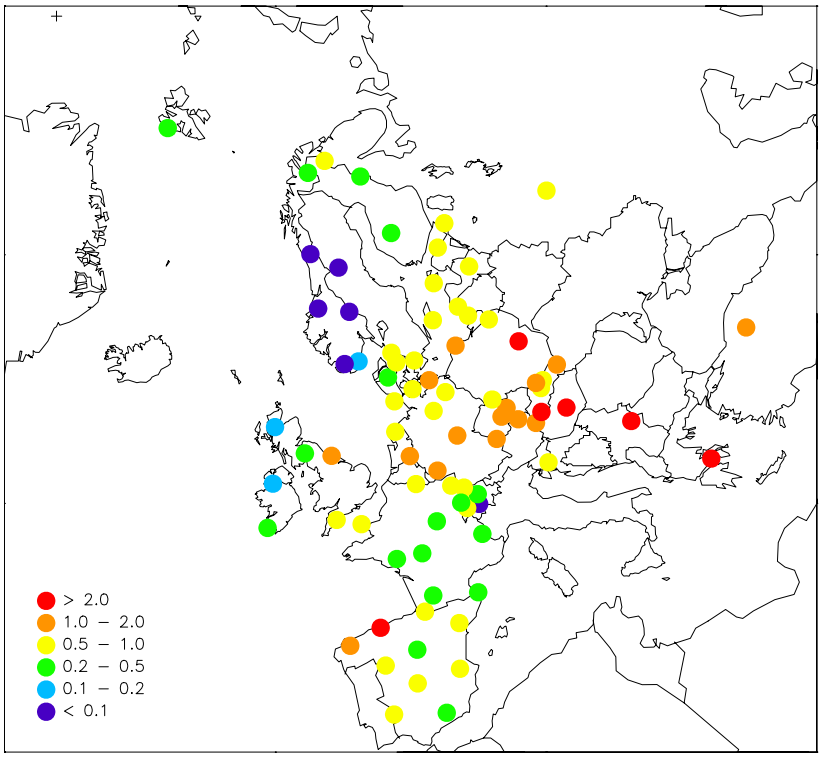

Figure 1.1: Geographical distribution of sulphur dioxide 2003. Unit: μg S/m^3.

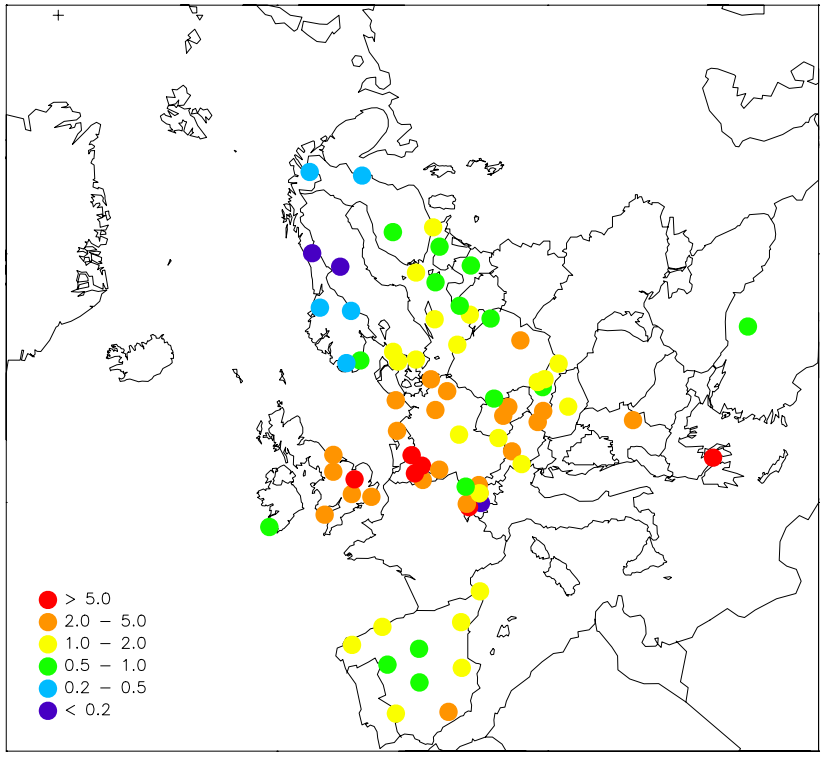

Figure 1.2: Geographical distribution of nitrogen dioxide 2003. Unit: μg N/m^3.

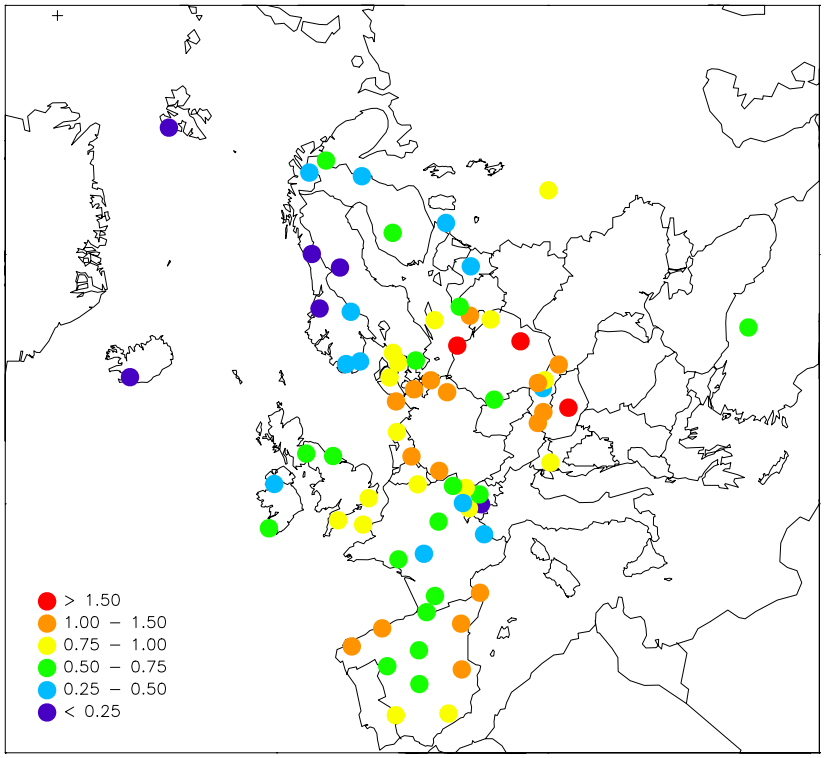

Figure 1.3: Geographical distribution of sulphate in aerosols 2003. Unit: μg S/m^3.

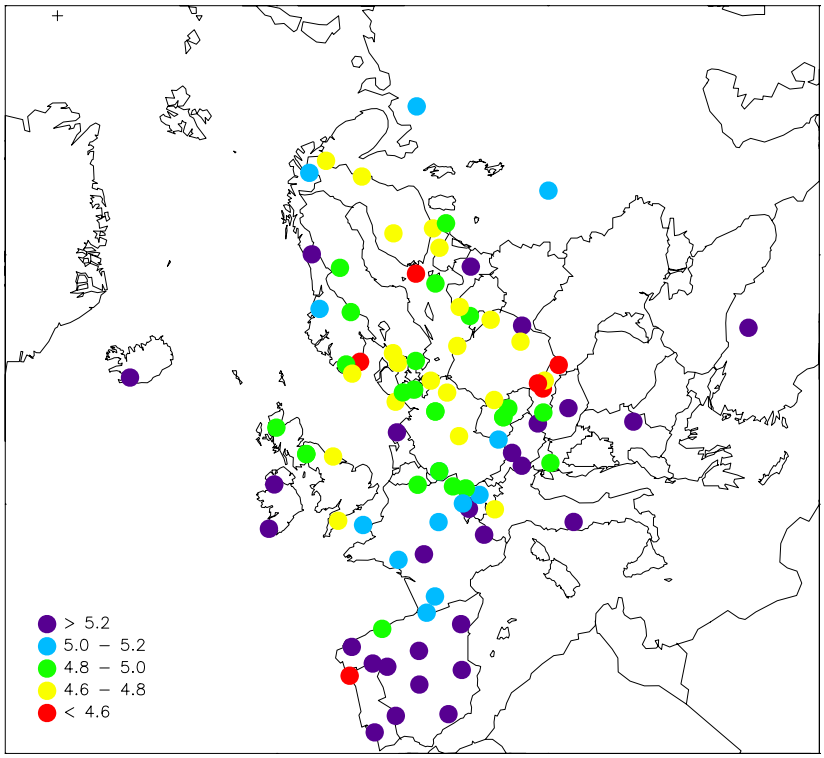

Figure 1.4: Geographical distribution of pH in precipitation 2003. Unit: pH units.

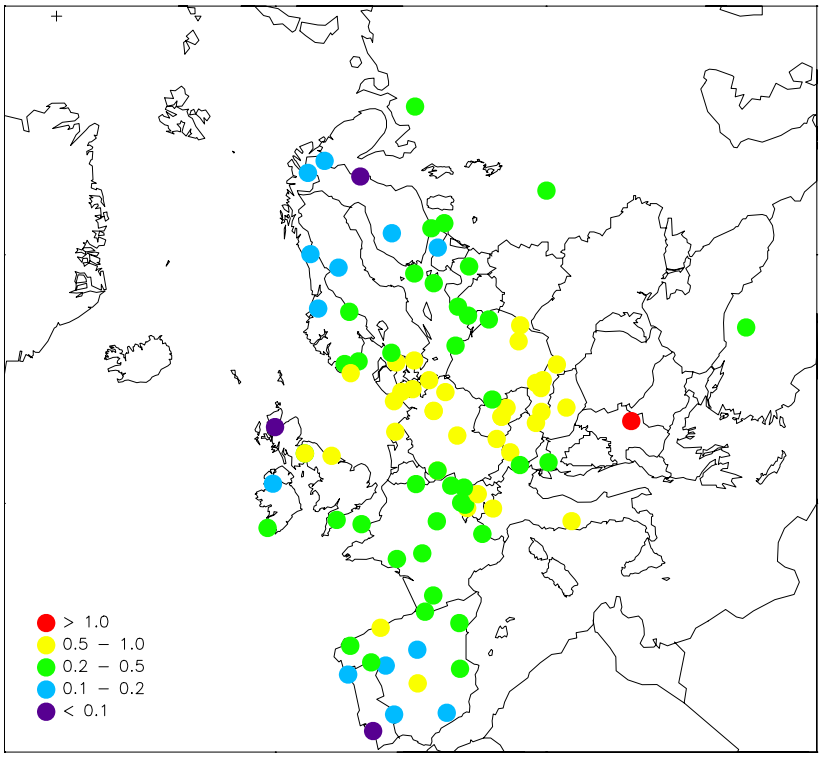

Figure 1.5: Geographical distribution of ammonium in precipitation 2003. Unit: mg N/l.

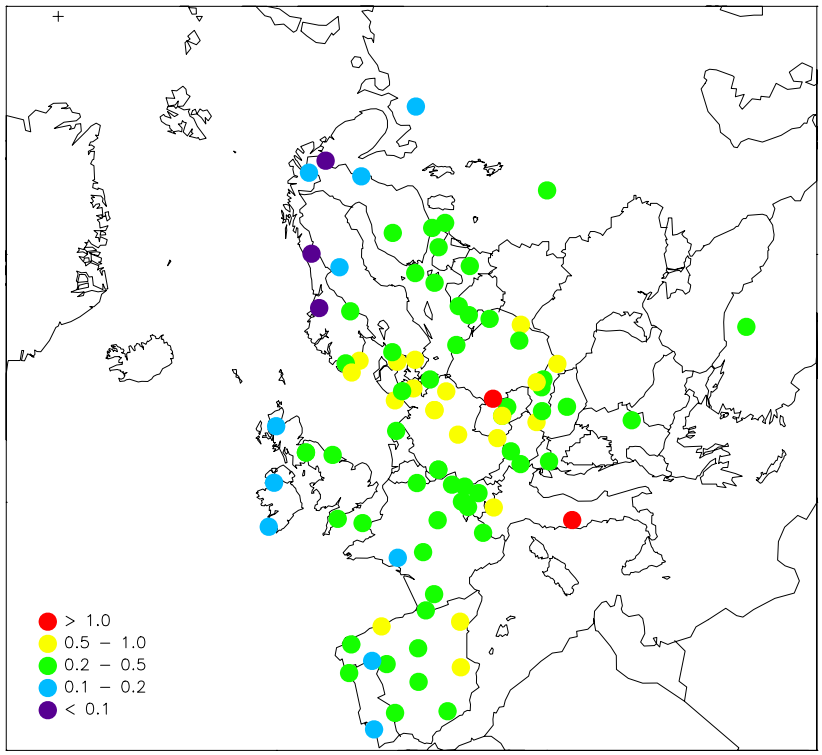

Figure 1.6: Geographical distribution of nitrate in precipitation 2003. Unit: mg N/l.

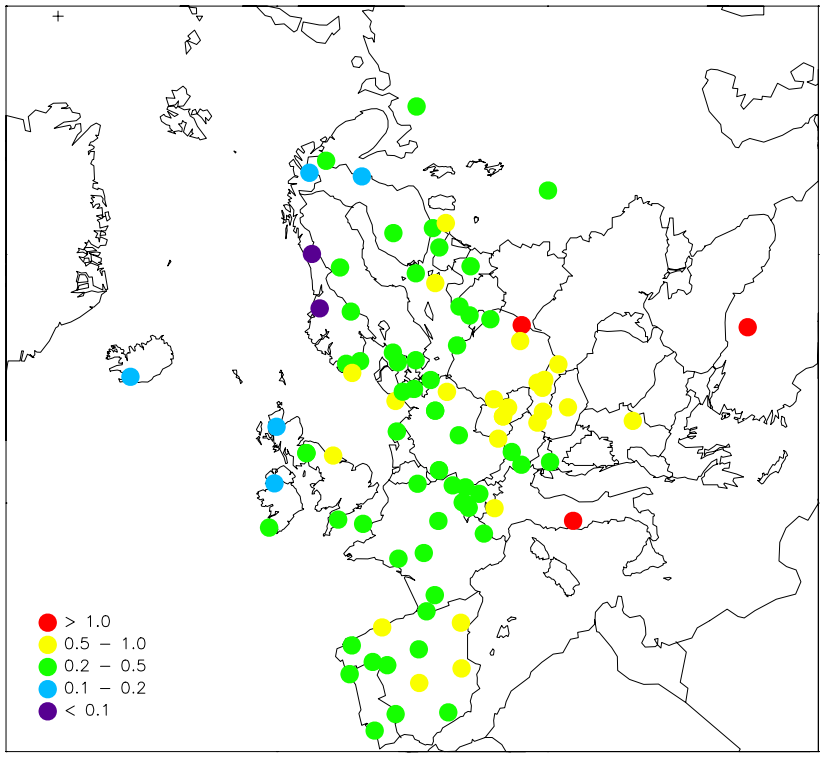

Figure 1.7: Geographical distribution of sulphate in precipitation 2003 (corrected for sea spray). Unit: mg S/l.

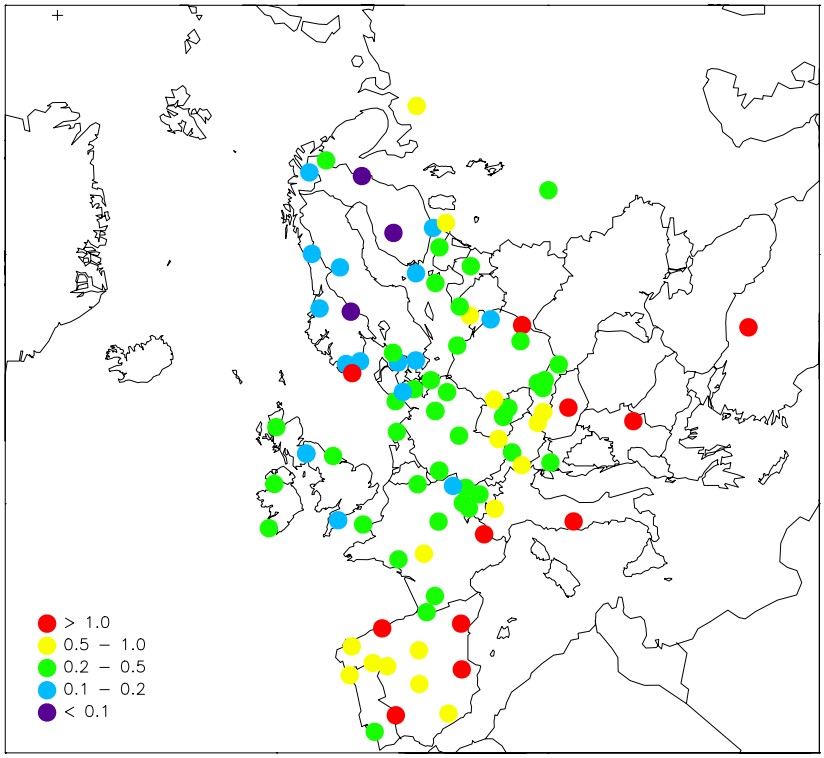

Figure 1.8: Geographical distribution of calcium in precipitation 2003. Unit: mg/l.

Annex 2

Annual statistics on precipitation data

AT0002R Illmitz Austria

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.97	0.10	8.50	272.3	100.0	0	73
Cl-	0.23	0.00	2.50	63.4	100.0	2	73
K+	0.08	0.01	2.59	21.9	96.9	3	71
Mg++	0.104	0.019	1.098	29.3	100.0	0	73
NH4+	0.92	0.04	12.75	259.0	100.0	0	73
NO3-	0.59	0.06	5.08	167.8	100.0	0	73
Na+	0.13	0.01	1.39	36.5	100.0	3	73
Precip	-	0.0	28.6	281.8	99.9	292	365
SO4--	0.72	0.06	9.03	203.7	100.0	0	73
SO4-- corr	0.71	0.04	9.00	199.6	100.0	0	73
cond	19.82	2.00	128.00	5585.8	100.0	0	73
pH	5.22	3.74	7.87	1696.4	100.0	0	73

AT0004R St. Koloman Austria

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.41	0.00	9.30	423.3	100.0	0	133
Cl-	2.16	0.00	120.80	2237.7	100.0	1	134
K+	0.13	0.01	6.17	138.4	99.5	27	132
Mg++	0.058	0.005	0.639	60.3	100.0	11	133
NH4+	0.70	0.07	11.94	720.7	100.0	0	133
NO3-	0.44	0.00	4.28	451.6	100.0	0	135
Na+	2.18	0.01	135.35	2252.9	99.5	5	132
Precip	-	0.0	32.7	1034.5	99.9	231	365
SO4--	0.53	0.00	14.12	552.1	100.0	0	135
SO4-- corr	0.38	-0.01	13.71	396.6	100.0	0	134
cond	23.81	2.00	745.00	24636.5	100.0	0	134
pH	5.48	4.21	7.92	3423.6	100.0	0	134

AT0005R Vorhegg Austria

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.69	0.00	15.60	546.0	100.0	1	83
Cl-	0.12	0.00	1.60	93.6	100.0	2	83
K+	0.05	0.00	1.84	39.5	98.9	18	80
Mg++	0.063	0.005	0.663	49.8	100.0	3	83
NH4+	0.45	0.02	4.80	351.9	100.0	0	83
NO3-	0.31	0.04	2.84	243.6	100.0	0	83
Na+	0.09	0.01	1.11	71.3	100.0	10	83
Precip	-	0.0	35.4	791.6	99.9	282	365
SO4--	0.32	0.01	2.42	250.1	100.0	0	83
SO4-- corr	0.30	-0.03	2.33	236.3	100.0	0	83
cond	10.96	2.00	84.00	8671.4	100.0	0	83
pH	5.29	4.32	7.89	4019.3	100.0	0	83

BY0004R Vysokoe Belarus

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	2.56	0.30	25.29	1108.5	68.6	0	94
Cl-	1.84	0.22	29.57	796.7	59.7	0	91
K+	2.62	0.10	18.20	1134.1	44.3	0	36
Mg++	0.447	0.125	2.610	193.4	66.8	0	87
NH4+	0.67	0.00	2.10	289.8	40.3	0	32
NO3-	0.64	0.02	22.78	277.0	68.5	0	101
Na+	1.12	0.06	8.00	486.3	44.3	0	36
Precip	-	0.0	12.6	432.3	38.0	4	139
SO4--	1.65	0.20	38.30	714.5	71.7	0	103
SO4-- corr	1.33	-0.21	36.92	577.1	65.8	0	93
cond	40.48	14.00	134.10	17498.4	34.2	0	32
pH	5.86	4.80	7.56	597.6	67.9	0	66

CH0002R Payerne Switzerland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.39	0.03	2.79	244.3	94.8	9	72
Cl-	0.16	0.01	1.70	98.5	94.8	0	72
K+	0.05	0.01	0.37	29.4	94.8	8	72
Mg++	0.032	0.002	0.181	20.0	94.8	0	72
NH4+	0.53	0.13	2.80	328.6	94.8	0	72
NO3-	0.31	0.06	1.74	189.7	94.8	0	72
Na+	0.09	0.01	0.90	55.0	94.8	12	72
Precip	-	0.0	27.9	620.6	100.0	246	365
SO4--	0.28	0.02	1.45	175.6	94.8	0	72
SO4-- corr	0.28	0.02	1.43	170.8	94.8	0	72
cond	10.37	2.38	71.76	6433.1	97.0	0	91
pH	5.51	4.30	7.02	1930.4	97.0	0	91

CH0004R Chaumont Switzerland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.36	0.03	2.24	284.6	99.9	8	41
Cl-	0.21	0.03	1.74	163.8	99.9	0	41
K+	0.04	0.01	0.24	33.9	99.9	0	41
Mg++	0.033	0.003	0.144	26.1	99.9	0	41
NH4+	0.37	0.06	1.53	293.4	99.9	0	41
NO3-	0.29	0.08	0.96	225.0	99.9	0	41
Na+	0.12	0.01	0.98	94.7	99.9	3	41
Precip	-	0.0	68.9	784.9	100.0	10	53
SO4--	0.29	0.05	0.76	230.0	99.9	0	41
SO4-- corr	0.28	0.05	0.76	222.0	99.9	0	41
cond	9.82	3.75	27.08	7706.0	100.0	0	42
pH	5.27	4.72	6.63	4232.5	100.0	0	42

CH0005R Rigi Switzerland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.31	0.03	2.39	320.2	94.5	14	96
Cl-	0.11	0.01	1.12	111.5	94.5	0	96
K+	0.05	0.01	0.97	55.4	94.5	6	96
Mg++	0.025	0.001	0.198	26.0	94.5	1	96
NH4+	0.62	0.03	3.00	630.7	94.5	0	96
NO3-	0.37	0.06	1.87	374.6	94.5	0	96
Na+	0.07	0.01	0.71	67.4	94.5	18	96
Precip	-	0.0	60.3	1023.9	99.7	222	364
SO4--	0.35	0.01	1.51	353.9	94.5	0	96
SO4-- corr	0.34	0.01	1.50	347.8	94.5	0	96
cond	12.43	2.88	89.04	12725.7	96.3	0	119
pH	5.20	4.18	7.14	6524.0	96.3	0	119

CS0005R Kamenicki Vis Serbia and Montenegro

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.74	0.13	18.57	823.2	100.0	0	81
Cl-	0.36	0.04	8.43	172.3	100.0	0	81
K+	1.15	0.04	12.45	542.4	100.0	0	81
Mg++	0.228	0.020	2.020	108.0	100.0	0	81
NH4+	1.99	0.02	27.90	939.4	100.0	0	81
NO3-	0.27	0.02	6.10	126.6	100.0	0	81
Na+	0.40	0.02	6.48	189.2	100.0	0	81
Precip	-	0.0	25.7	473.1	99.9	284	365
SO4--	0.82	0.02	19.73	387.3	100.0	0	81
SO4-- corr	0.78	-0.14	19.19	369.0	100.0	0	81
cond	28.11	6.00	220.00	13299.6	100.0	0	81
pH	5.30	4.00	8.17	2358.4	100.0	0	81

CZ0001R Svratouch Czech Republic

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.30	0.03	1.67	194.8	91.8	0	33
Cl-	0.21	0.07	0.86	139.7	91.2	0	32
K+	0.07	0.00	0.17	47.1	91.8	3	33
Mg++	0.042	0.001	0.352	27.0	91.8	1	33
NH4+	0.58	0.01	4.82	376.9	92.9	4	34
NO3-	0.45	0.00	1.95	292.7	91.2	4	32
Na+	0.12	0.01	1.20	78.0	91.8	0	33
Precip	-	0.0	68.4	649.1	100.0	7	53
SO4--	0.68	0.07	2.78	440.7	91.2	0	32
SO4-- corr	0.67	0.06	2.76	433.2	91.2	0	32
cond	18.31	2.61	110.10	11883.9	92.4	0	33
pH	4.81	4.03	7.41	10121.3	92.9	0	34

CZ0003R Kosetice Czech Republic

January 2003 - December 2003
Daily data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.32	0.01	3.14	149.0	98.5	1	109
Cl-	0.46	0.07	9.26	216.4	96.8	0	105
K+	0.18	0.00	5.51	85.0	98.6	1	109
Mg++	0.053	0.001	0.694	25.1	98.6	1	110
NH4+	0.72	0.01	7.45	341.8	99.4	14	122
NO3-	0.50	0.09	5.63	235.4	96.8	0	105
Na+	0.23	0.02	5.04	106.3	98.6	0	110
Precip	-	0.0	33.8	471.9	99.9	230	365
SO4--	0.60	0.09	5.79	284.8	96.8	0	105
SO4-- corr	0.58	0.09	5.76	275.5	96.8	0	105
cond	19.58	3.34	105.10	9240.9	98.8	0	112
pH	4.93	3.85	7.54	5578.6	99.3	0	120

CZ0003R Kosetice Czech Republic

January 2003 - December 2003
Weekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.41	0.02	6.14	191.1	88.5	0	33
Cl-	0.35	0.10	7.46	161.6	89.0	0	35
K+	0.16	0.03	1.76	72.9	88.5	0	33
Mg++	0.081	0.007	3.056	37.8	88.5	0	33
NH4+	0.71	0.01	3.67	330.8	89.0	1	35
NO3-	0.50	0.01	5.98	233.4	89.0	0	35
Na+	0.19	0.04	4.05	88.6	88.5	0	33
Precip	-	0.0	44.4	465.5	100.0	5	53
SO4--	0.61	0.01	3.80	282.5	89.0	1	35
SO4-- corr	0.59	-0.00	3.46	274.9	89.0	1	35
cond	19.76	2.68	166.90	9199.4	88.3	0	33
pH	4.85	3.50	6.75	6566.2	89.0	0	35

DE0001R Westerland Germany

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.34	0.10	3.10	199.2	98.8	0	40
Cl-	6.91	0.80	33.30	4048.2	98.8	0	40
K+	0.16	0.03	0.66	93.7	98.8	0	40
Mg++	0.493	0.064	2.196	288.6	98.8	0	40
NH4+	0.73	0.19	3.05	427.4	98.8	0	40
NO3-	0.62	0.02	2.31	363.5	98.8	0	40
Na+	4.07	0.45	19.09	2384.9	98.8	0	40
Precip	-	0.0	46.7	585.7	99.2	5	52
SO4--	0.86	0.31	2.97	504.6	98.8	0	40
SO4-- corr	0.53	0.12	2.33	311.8	98.8	0	40
cond	34.98	4.00	120.00	20486.0	98.8	0	40
pH	4.76	4.31	6.90	10236.4	98.8	0	40

DE0002R Langenbrugge Germany

January 2003 - December 2003
Daily data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.22	0.00	9.40	86.4	97.6	0	101
Cl-	0.64	0.00	13.10	249.8	97.6	0	101
K+	0.07	0.01	1.21	26.8	97.6	1	101
Mg++	0.060	0.003	1.003	23.4	97.6	4	101
NH4+	0.64	0.05	5.22	248.2	97.6	0	101
NO3-	0.53	0.08	5.54	207.2	97.6	0	101
Na+	0.38	0.01	7.92	147.6	97.6	0	101
Precip	-	0.0	45.8	390.2	99.9	197	365
SO4--	0.48	0.07	4.92	185.8	97.6	0	101
SO4-- corr	0.44	0.05	4.62	172.5	97.6	0	101
cond	16.84	2.50	172.00	6569.3	97.8	2	96
pH	4.86	3.93	6.97	5445.7	97.7	0	94

DE0002R Langenbrugge Germany

January 2003 - December 2003
Weekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.32	0.00	2.90	136.8	99.1	0	43
Cl-	0.77	0.00	4.20	326.2	99.1	0	43
K+	0.06	0.02	0.72	26.8	99.1	0	43
Mg++	0.074	0.014	0.366	31.2	99.1	0	43
NH4+	0.69	0.16	4.94	293.9	99.1	0	43
NO3-	0.56	0.22	3.52	238.5	99.1	0	43
Na+	0.46	0.02	3.01	196.5	99.1	0	43
Precip	-	0.0	70.3	424.5	99.2	5	52
SO4--	0.53	0.15	4.35	226.5	99.1	0	43
SO4-- corr	0.49	0.14	4.23	208.8	99.1	0	43
cond	15.52	7.00	110.00	6588.0	99.1	0	43
pH	4.85	4.00	6.14	5938.1	99.1	0	43

DE0003R Schauinsland Germany

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.23	0.00	1.40	315.9	99.8	0	41
Cl-	0.28	0.00	1.10	379.2	99.8	0	41
K+	0.04	0.01	0.27	59.6	99.8	0	41
Mg++	0.034	0.000	0.103	46.2	99.8	0	41
NH4+	0.41	0.06	1.75	562.7	99.8	0	41
NO3-	0.35	0.08	1.05	479.9	99.8	0	41
Na+	0.15	0.01	0.78	211.4	99.8	0	41
Precip	-	0.0	118.0	1376.9	95.3	6	50
SO4--	0.35	0.10	0.80	486.4	99.8	0	41
SO4-- corr	0.34	0.08	0.79	466.7	99.8	0	41
cond	10.51	5.00	21.00	14464.2	99.8	0	41
pH	4.89	4.34	6.07	17656.3	99.8	0	41

DE0004R Deuselbach Germany

January 2003 - December 2003
Daily data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.37	0.00	17.90	219.4	99.5	0	126
Cl-	0.46	0.00	8.80	272.9	99.5	0	126
K+	0.07	0.01	2.09	40.8	99.5	3	126
Mg++	0.049	0.002	0.748	29.0	99.5	4	126
NH4+	0.52	0.03	5.00	307.9	99.5	0	126
NO3-	0.44	0.05	6.30	261.5	99.5	0	126
Na+	0.25	0.02	5.70	151.6	99.5	0	126
Precip	-	0.0	26.2	596.1	99.9	222	365
SO4--	0.41	0.07	4.49	244.0	99.5	0	126
SO4-- corr	0.39	0.05	4.36	229.9	99.5	0	126
cond	13.28	2.00	66.00	7918.0	98.6	4	103
pH	5.08	4.22	7.59	4931.6	98.6	0	102

DE0004R Deuselbach Germany

January 2003 - December 2003
Weekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.34	0.00	2.40	220.4	99.5	0	39
Cl-	0.40	0.10	1.30	257.2	99.5	0	39
K+	0.05	0.02	0.35	31.2	99.5	0	39
Mg++	0.055	0.012	0.197	35.4	99.5	0	39
NH4+	0.47	0.08	1.93	301.0	99.5	0	39
NO3-	0.40	0.11	1.61	254.7	99.5	0	39
Na+	0.23	0.03	1.06	146.5	99.5	0	39
Precip	-	0.0	63.3	640.4	99.2	10	52
SO4--	0.42	0.12	1.53	266.4	99.5	0	39
SO4-- corr	0.39	0.10	1.51	252.0	99.5	0	39
cond	11.76	7.00	35.00	7533.3	99.3	0	37
pH	4.96	4.05	6.34	6994.0	99.5	0	39

DE0005R Brotjacklriegel Germany

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.58	0.20	2.40	352.9	99.6	0	42
Cl-	0.26	0.00	1.50	157.3	99.8	0	43
K+	0.14	0.02	1.22	85.4	99.8	0	43
Mg++	0.074	0.028	0.445	45.0	99.8	0	43
NH4+	0.80	0.18	6.90	487.1	99.8	0	43
NO3-	0.61	0.18	4.21	372.0	99.8	0	43
Na+	0.17	0.02	1.58	103.8	99.8	0	43
Precip	-	0.0	46.3	611.0	99.2	8	52
SO4--	0.56	0.15	3.76	343.4	99.8	0	43
SO4-- corr	0.55	0.13	3.67	333.2	99.8	0	43
cond	13.62	7.00	84.00	8323.6	99.7	0	42
pH	5.20	4.49	6.77	3852.5	99.8	0	43

DE0007R Neuglobsow Germany

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.25	0.10	1.40	95.0	98.7	0	36
Cl-	0.58	0.10	5.10	218.5	98.7	0	36
K+	0.10	0.01	1.08	37.1	98.7	0	36
Mg++	0.063	0.010	0.472	23.7	98.7	0	36
NH4+	0.71	0.19	3.79	268.5	98.7	0	36
NO3-	0.59	0.29	3.02	220.8	98.7	0	36
Na+	0.31	0.03	3.30	117.9	98.7	0	36
Precip	-	0.0	48.0	375.8	95.3	9	50
SO4--	0.58	0.21	2.47	216.9	98.7	0	36
SO4-- corr	0.55	0.16	2.39	205.8	98.7	0	36
cond	16.75	9.00	42.00	6295.5	98.5	0	35
pH	4.71	4.23	6.75	7335.8	98.7	0	36

DE0008R Schmucke Germany

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.22	0.10	2.70	185.8	99.5	0	42
Cl-	0.47	0.00	7.80	405.2	99.5	0	42
K+	0.06	0.02	0.34	48.2	99.5	0	42
Mg++	0.046	0.010	0.451	39.5	99.5	0	42
NH4+	0.56	0.15	5.49	475.4	99.5	0	42
NO3-	0.52	0.22	3.89	443.4	99.5	0	42
Na+	0.29	0.02	5.12	246.1	99.5	0	42
Precip	-	0.0	72.9	852.9	97.3	5	51
SO4--	0.47	0.18	2.10	402.6	99.5	0	42
SO4-- corr	0.45	0.16	2.07	381.5	99.5	0	42
cond	15.19	7.00	61.00	12951.1	99.5	0	41
pH	4.75	4.15	6.25	15285.9	99.5	0	42

DE0009R Zingst Germany

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.33	0.10	2.70	170.1	99.8	0	41
Cl-	1.21	0.20	7.50	633.2	99.8	0	41
K+	0.08	0.02	0.42	41.4	99.8	0	41
Mg++	0.104	0.036	0.499	54.5	99.8	0	41
NH4+	0.57	0.04	4.05	299.6	99.8	0	41
NO3-	0.50	0.05	4.61	260.6	99.8	0	41
Na+	0.69	0.10	4.42	363.1	99.8	0	41
Precip	-	0.0	64.0	523.5	99.2	10	52
SO4--	0.56	0.24	1.99	291.8	99.8	0	41
SO4-- corr	0.50	0.21	1.92	260.7	99.8	0	41
cond	16.76	7.00	72.00	8775.2	99.6	0	40
pH	4.79	4.14	6.07	8464.0	99.8	0	41

DK0005R Keldsnor Denmark

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.39	0.15	1.03	150.8	87.3	0	19
Cl-	2.06	0.50	4.96	803.8	96.0	0	20
K+	0.23	0.03	1.00	88.6	96.0	0	20
Mg++	0.164	0.042	0.413	63.8	96.0	0	20
NH4+	0.74	0.14	1.98	287.6	96.0	0	20
NO3-	0.61	0.31	1.10	236.6	96.0	0	20
Na+	1.24	0.29	2.84	482.5	96.0	0	20
Precip	-	0.0	41.1	390.0	99.9	2	24
SO4--	0.59	0.34	1.34	231.5	96.0	0	20
SO4-- corr	0.49	0.09	1.25	189.6	96.0	0	20
cond	22.90	14.50	37.10	8932.3	96.0	0	20
pH	4.96	4.44	6.53	4323.8	96.0	0	20

DK0008R Anholt Denmark

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.18	0.06	0.90	98.2	100.0	0	22
Cl-	4.57	0.74	17.14	2497.7	83.7	0	19
K+	0.13	0.02	2.35	72.2	100.0	0	22
Mg++	0.304	0.041	1.855	166.2	72.5	0	17
NH4+	0.50	0.19	2.16	274.8	100.0	0	22
NO3-	0.54	0.27	1.64	293.6	100.0	0	22
Na+	1.76	0.44	5.23	964.3	100.0	0	22
Precip	-	0.0	52.5	546.4	99.7	2	24
SO4--	0.59	0.30	1.71	323.2	100.0	0	22
SO4-- corr	0.43	0.13	1.33	234.2	100.0	0	22
cond	32.90	16.20	74.80	17973.9	100.0	0	22
pH	4.67	4.27	5.02	11628.9	100.0	0	22

DK0022R Sepstrup Sande Denmark

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.12	0.04	0.41	80.8	100.0	0	22
Cl-	2.40	0.20	7.95	1615.9	100.0	0	22
K+	0.07	0.01	0.19	46.9	100.0	0	22
Mg++	0.140	0.012	0.491	94.3	100.0	0	22
NH4+	0.53	0.20	1.55	357.7	100.0	0	22
NO3-	0.47	0.14	1.20	315.3	100.0	0	22
Na+	1.39	0.10	4.54	938.9	100.0	0	22
Precip	-	0.0	55.0	673.3	99.7	2	24
SO4--	0.49	0.26	1.23	327.9	100.0	0	22
SO4-- corr	0.38	0.09	1.03	252.7	100.0	0	22
cond	22.13	10.60	44.70	14903.0	100.0	0	22
pH	4.83	4.50	5.82	9925.2	100.0	0	22

EE0009R Lahemaa Estonia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.25	0.00	1.60	179.2	86.6	1	37
Cl-	0.40	0.10	1.00	285.6	92.6	0	42
K+	0.06	0.01	0.43	42.5	92.0	2	39
Mg++	0.033	0.005	0.161	24.2	92.0	2	39
NH4+	0.13	0.01	0.80	91.6	91.6	4	37
NO3-	0.21	0.01	0.84	151.7	92.6	0	42
Na+	0.17	0.02	1.15	124.9	92.0	0	39
Precip	-	0.7	51.6	723.9	100.0	8	53
SO4--	0.38	0.15	1.65	274.5	92.6	0	42
SO4-- corr	0.36	0.15	1.64	260.7	92.6	0	42
cond	10.47	5.00	59.00	7576.0	100.0	0	45
pH	4.80	3.94	6.46	11497.8	100.0	0	45

EE0011R Vilsandi Estonia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.44	0.10	1.60	181.6	66.8	0	31
Cl-	1.37	0.40	8.30	569.4	66.8	0	31
K+	0.12	0.01	1.30	49.1	66.8	1	31
Mg++	0.127	0.018	0.767	52.8	66.8	0	31
NH4+	0.34	0.01	2.98	139.4	63.4	3	30
NO3-	0.42	0.01	5.17	174.2	66.8	3	31
Na+	0.56	0.05	2.19	231.8	66.8	0	31
Precip	-	0.0	74.4	416.7	100.0	21	53
SO4--	0.60	0.23	4.28	251.0	66.8	0	31
SO4-- corr	0.54	0.20	3.75	223.2	66.8	0	31
cond	17.18	4.00	52.00	7158.6	66.8	0	31
pH	4.85	4.35	6.82	5873.6	66.8	0	31

ES0007R Viznar Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.92	0.15	18.10	567.7	91.8	0	67
Cl-	0.92	0.47	4.80	562.6	93.1	0	74
K+	0.12	0.01	1.00	70.7	91.8	3	67
Mg++	0.174	0.050	2.000	107.0	91.8	0	67
NH4+	0.18	0.02	1.08	111.7	92.3	24	68
NO3-	0.29	0.09	2.71	176.5	93.1	0	74
Na+	0.41	0.03	2.00	253.8	91.8	4	67
Precip	-	0.0	35.8	615.0	99.6	264	364
SO4--	0.49	0.23	3.48	302.9	93.1	0	74
SO4-- corr	0.43	0.18	3.37	262.4	93.1	0	74
cond	13.15	5.20	129.40	8085.0	89.8	0	79
pH	6.24	5.86	7.28	352.5	94.0	0	80

ES0008R Niembro Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.01	0.14	13.90	679.2	97.5	0	121
Cl-	9.89	0.79	81.38	6654.6	98.6	0	137
K+	0.37	0.07	4.00	251.8	97.5	0	121
Mg++	0.719	0.040	4.700	484.1	97.5	0	121
NH4+	0.56	0.02	7.85	376.0	97.9	10	130
NO3-	0.68	0.12	10.19	458.6	98.6	0	137
Na+	6.83	0.32	44.00	4598.0	97.5	0	121
Precip	-	0.0	26.0	673.0	96.9	199	354
SO4--	1.39	0.37	12.77	935.0	98.6	0	137
SO4-- corr	0.87	-0.01	11.78	586.0	98.6	0	137
cond	57.31	11.20	199.90	38572.5	98.7	0	140
pH	4.98	3.72	7.36	7108.9	98.7	0	140

ES0009R Campisabalos Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.81	0.08	17.50	487.0	93.2	0	77
Cl-	0.89	0.55	8.85	534.4	94.2	0	83
K+	0.11	0.01	1.01	63.2	93.2	7	77
Mg++	0.077	0.005	1.000	45.8	93.2	2	77
NH4+	0.18	0.02	3.19	105.3	94.0	25	80
NO3-	0.37	0.12	4.00	222.4	94.2	0	83
Na+	0.38	0.03	10.60	230.0	93.2	5	77
Precip	-	0.0	30.0	599.1	96.4	229	352
SO4--	0.44	0.17	4.01	262.3	94.2	0	83
SO4-- corr	0.39	0.17	3.94	235.4	94.2	0	83
cond	11.84	1.25	145.70	7091.1	93.4	4	91
pH	5.79	3.93	7.06	965.5	94.7	0	92

ES0011R Barcarrola Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.70	0.61	34.10	1184.1	97.0	0	71
Cl-	1.63	0.13	18.81	1131.3	97.1	0	72
K+	0.25	0.01	6.10	171.8	97.0	1	71
Mg++	0.644	0.030	15.600	447.9	97.0	0	71
NH4+	0.12	0.02	4.27	85.6	92.9	35	71
NO3-	0.27	0.02	6.98	184.1	97.1	1	72
Na+	0.91	0.03	7.70	635.7	97.0	3	71
Precip	-	0.0	34.4	695.3	98.3	265	359
SO4--	0.53	0.29	7.02	367.6	97.1	0	72
SO4-- corr	0.44	0.03	6.68	306.9	97.1	0	72
cond	20.70	6.00	199.90	14391.0	97.2	0	73
pH	6.51	5.84	7.02	214.9	97.2	0	73

ES0012R Zarra Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	3.31	0.38	26.00	977.2	94.1	0	63
Cl-	1.24	0.50	11.34	366.4	94.6	0	68
K+	0.20	0.01	3.50	58.3	94.1	3	63
Mg++	0.344	0.040	2.200	101.3	94.1	0	63
NH4+	0.27	0.02	3.09	78.1	94.4	18	65
NO3-	0.79	0.09	13.33	231.6	94.6	0	68
Na+	0.78	0.12	6.00	228.5	94.1	0	63
Precip	-	0.0	31.8	295.0	97.5	267	356
SO4--	0.79	0.23	12.50	233.6	94.6	0	68
SO4-- corr	0.71	0.20	12.22	208.3	94.6	0	68
cond	28.49	5.40	199.90	8405.9	94.8	0	70
pH	6.36	5.72	7.80	130.2	94.8	0	70

ES0013R Penausende Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.72	0.12	9.50	330.4	97.4	0	81
Cl-	0.80	0.50	4.14	364.2	98.3	0	87
K+	0.18	0.01	4.30	81.3	97.4	6	81
Mg++	0.073	0.020	0.900	33.2	97.4	0	81
NH4+	0.13	0.02	3.29	60.6	97.6	36	84
NO3-	0.33	0.08	10.40	152.7	98.3	0	87
Na+	0.31	0.03	3.00	143.2	97.4	3	81
Precip	-	0.0	37.0	457.1	99.1	251	362
SO4--	0.43	0.20	4.05	198.2	98.3	0	87
SO4-- corr	0.40	0.14	3.91	182.5	98.3	0	87
cond	10.50	1.25	139.10	4799.5	91.1	6	88
pH	6.05	4.92	7.06	403.1	98.8	0	92

ES0014R Els Torms Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	2.04	0.51	19.70	882.2	91.2	0	53
Cl-	1.15	0.49	8.79	497.0	93.3	0	65
K+	0.22	0.07	3.40	93.8	91.2	0	53
Mg++	0.249	0.070	1.500	108.1	91.2	0	53
NH4+	0.35	0.02	2.56	152.4	91.9	6	58
NO3-	0.57	0.18	5.02	249.3	93.3	0	65
Na+	0.49	0.13	3.90	212.3	91.2	0	53
Precip	-	0.0	29.6	433.4	98.5	271	360
SO4--	0.85	0.23	7.44	367.8	93.3	0	65
SO4-- corr	0.79	0.20	7.25	340.0	93.3	0	65
cond	24.51	7.30	177.00	10623.5	93.4	0	66
pH	6.28	5.32	7.82	229.3	93.4	0	66

ES0015R Risco Llano Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.70	0.12	3.99	298.6	86.0	0	58
Cl-	1.07	0.55	9.04	460.5	86.8	0	60
K+	0.15	0.05	0.58	65.9	86.0	0	58
Mg++	0.110	0.030	0.570	47.2	86.0	0	58
NH4+	0.51	0.02	2.61	218.6	86.8	1	60
NO3-	0.36	0.15	1.83	154.4	86.8	0	60
Na+	0.57	0.03	7.20	245.2	86.0	1	58
Precip	-	0.0	25.0	428.8	97.7	266	357
SO4--	0.62	0.29	6.02	264.6	86.8	0	60
SO4-- corr	0.56	0.08	5.95	238.1	86.8	0	60
cond	15.57	5.90	155.00	6677.0	86.8	0	60
pH	5.68	3.58	6.96	888.3	86.8	0	60

ES0016R O Saviñao Spain

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.66	0.11	6.60	624.2	94.5	0	90
Cl-	1.40	0.45	13.81	1324.0	96.7	0	110
K+	0.20	0.05	3.70	189.0	94.5	0	90
Mg++	0.206	0.040	3.800	194.1	94.5	0	90
NH4+	0.31	0.02	5.16	293.0	96.1	10	102
NO3-	0.27	0.13	5.97	252.1	96.7	0	110
Na+	0.78	0.11	5.40	738.3	94.5	0	90
Precip	-	0.0	46.6	943.6	93.9	187	343
SO4--	0.54	0.21	24.85	510.8	96.7	0	110
SO4-- corr	0.47	0.19	24.21	440.5	96.7	0	110
cond	16.24	1.25	199.90	15320.2	93.5	1	117
pH	6.05	3.51	8.30	838.1	97.2	0	118

FI0004R Ahtari Finland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.08	0.01	1.75	45.6	100.0	0	51
Cl-	0.13	0.03	2.48	71.7	100.0	0	51
K+	0.05	0.01	1.20	26.2	100.0	0	51
Mg++	0.018	0.002	0.162	9.8	100.0	2	51
NH4+	0.17	0.01	1.08	95.3	100.0	0	51
NO3-	0.22	0.04	1.67	118.7	100.0	0	51
Na+	0.07	0.01	1.06	40.3	100.0	0	51
Precip	-	0.0	48.4	548.8	99.9	4	56
SO4--	0.27	0.05	2.18	148.1	100.0	0	51
SO4-- corr	0.26	0.05	2.14	144.4	100.0	0	51
cond	10.95	4.00	60.00	6008.5	100.0	0	51
pH	4.73	4.00	5.30	10249.9	100.0	0	51

FI0009R Uto Finland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.13	0.02	0.86	31.6	99.2	0	76
Cl-	1.39	0.10	23.83	340.9	99.2	0	76
K+	0.12	0.02	2.12	28.2	99.2	0	76
Mg++	0.096	0.009	1.594	23.5	99.2	0	76
NH4+	0.30	0.02	3.44	73.2	99.2	0	76
NO3-	0.39	0.05	4.39	96.2	99.2	0	76
Na+	0.79	0.06	13.49	193.9	99.2	0	76
Precip	-	0.0	23.8	245.3	91.4	249	332
SO4--	0.41	0.11	3.41	101.7	99.2	0	76
SO4-- corr	0.35	0.07	3.26	85.7	99.2	0	76
cond	21.07	6.00	143.00	5167.1	99.2	0	76
pH	4.55	3.69	5.79	6864.6	99.2	0	76

FI0017R Virolahti II Finland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.15	0.02	1.33	88.1	98.0	0	122
Cl-	0.28	0.02	6.08	163.8	98.0	0	122
K+	0.08	0.01	2.17	45.0	98.0	0	122
Mg++	0.033	0.004	0.472	19.7	98.0	0	122
NH4+	0.24	0.00	2.02	143.8	98.0	2	122
NO3-	0.28	0.03	2.26	167.4	98.0	0	122
Na+	0.15	0.01	3.38	88.7	98.0	0	122
Precip	-	0.0	37.3	587.9	99.7	217	362
SO4--	0.42	0.05	2.96	247.2	98.0	0	122
SO4-- corr	0.41	0.05	2.94	238.1	98.0	0	122
cond	15.07	2.00	87.00	8862.1	98.0	0	122
pH	4.63	3.84	5.92	13725.2	98.0	0	122

FI0022R Oulanka Finland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.04	0.00	1.10	16.0	98.5	1	150
Cl-	0.12	0.01	1.53	47.4	98.5	0	150
K+	0.03	0.00	0.49	12.0	98.5	9	150
Mg++	0.011	0.002	0.128	4.5	98.5	2	150
NH4+	0.09	0.00	2.72	36.6	98.5	1	150
NO3-	0.15	0.02	1.81	59.8	98.5	0	150
Na+	0.07	0.00	1.14	27.3	98.5	1	150
Precip	-	0.0	12.7	396.8	99.7	183	362
SO4--	0.20	0.01	4.65	77.8	98.5	3	150
SO4-- corr	0.19	0.00	4.62	75.3	98.5	3	150
cond	9.69	3.00	107.00	3842.6	98.5	0	150
pH	4.73	3.77	5.62	7397.5	98.5	0	150

FR0003R La Crouzille France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.64	0.03	3.02	215.9	87.0	0	43
Cl-	1.02	0.05	8.23	345.9	87.0	0	43
K+	0.08	0.01	1.30	27.8	87.0	6	43
Mg++	0.116	0.010	0.580	39.3	87.0	1	43
NH4+	0.46	0.01	3.44	156.0	87.0	1	43
NO3-	0.34	0.04	2.51	114.7	87.0	0	43
Na+	0.64	0.03	4.56	217.4	87.0	0	43
Precip	-	0.2	32.0	338.9	99.9	310	365
SO4--	0.40	0.06	2.65	135.6	87.0	0	43
SO4-- corr	0.34	0.03	2.62	116.0	87.0	0	43
cond	13.39	4.40	58.70	4536.9	90.6	0	46
pH	5.63	4.98	6.72	785.1	90.6	0	46

FR0005R La Hague France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.30	0.12	0.98	74.8	98.2	0	18
Cl-	5.41	0.60	20.73	1325.0	98.2	0	18
K+	0.12	0.03	0.45	28.4	98.2	0	18
Mg++	0.406	0.110	1.470	99.4	98.2	0	18
NH4+	0.29	0.08	2.55	72.3	98.2	0	18
NO3-	0.24	0.06	1.73	59.5	98.2	0	18
Na+	3.05	0.40	11.77	746.7	98.2	0	18
Precip	-	0.2	46.5	245.0	99.9	344	365
SO4--	0.50	0.25	1.80	122.3	98.2	0	18
SO4-- corr	0.24	0.04	1.62	59.8	98.2	0	18
cond	29.62	12.30	175.00	7257.9	99.4	0	20
pH	5.14	3.99	6.68	1766.9	99.4	0	20

FR0008R Donon France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.19	0.01	8.08	199.0	97.0	7	117
Cl-	0.44	0.03	8.68	459.8	97.0	12	117
K+	0.03	0.01	0.27	33.4	97.0	36	117
Mg++	0.038	0.010	0.590	39.8	97.0	48	117
NH4+	0.40	0.01	3.38	414.0	97.0	1	117
NO3-	0.35	0.05	2.64	365.3	97.0	0	117
Na+	0.26	0.01	4.79	267.3	97.0	6	117
Precip	-	0.1	32.0	1037.3	99.9	221	365
SO4--	0.34	0.05	2.16	355.5	97.0	0	117
SO4-- corr	0.32	0.04	2.08	332.4	97.0	0	117
cond	12.93	2.70	92.90	13407.7	97.0	0	118
pH	4.85	3.87	7.10	14710.5	97.0	0	118

FR0009R Revin France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.26	0.02	7.10	246.4	97.8	0	123
Cl-	0.86	0.03	15.74	814.9	97.8	3	123
K+	0.04	0.01	0.47	38.7	97.8	25	123
Mg++	0.073	0.010	1.100	69.5	97.8	26	123
NH4+	0.50	0.04	4.74	471.7	97.8	0	123
NO3-	0.38	0.07	3.49	356.4	97.8	0	123
Na+	0.52	0.01	8.98	489.9	97.8	3	123
Precip	-	0.1	70.6	950.7	99.9	214	365
SO4--	0.40	0.08	3.90	379.5	97.8	0	123
SO4-- corr	0.36	0.06	3.58	338.3	97.8	0	123
cond	14.40	3.20	119.70	13692.0	98.1	0	127
pH	4.99	3.89	6.96	9734.8	98.1	0	127

FR0010R Morvan France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.20	0.01	3.67	155.3	94.8	4	121
Cl-	0.58	0.03	5.98	444.8	94.8	6	121
K+	0.13	0.01	2.82	97.3	94.8	17	121
Mg++	0.047	0.010	0.430	36.0	94.8	34	121
NH4+	0.28	0.01	2.18	216.3	94.9	4	122
NO3-	0.23	0.03	2.06	174.5	94.8	0	121
Na+	0.36	0.01	3.86	275.0	94.8	3	121
Precip	-	0.1	31.4	764.0	99.9	224	365
SO4--	0.27	0.02	1.31	205.7	94.8	0	121
SO4-- corr	0.24	0.02	1.22	182.7	94.8	0	121
cond	9.88	2.20	51.10	7545.7	94.9	0	123
pH	5.13	4.14	6.78	5648.3	94.9	0	123

FR0012R Iraty France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.48	0.01	16.43	708.0	96.6	2	153
Cl-	0.90	0.03	11.06	1323.9	96.6	17	153
K+	0.05	0.01	0.80	76.7	96.6	48	153
Mg++	0.085	0.010	0.970	125.7	96.6	41	153
NH4+	0.27	0.01	4.12	399.9	96.6	10	153
NO3-	0.21	0.01	3.91	303.1	96.6	2	153
Na+	0.53	0.01	6.81	771.9	96.6	14	153
Precip	-	0.1	67.6	1470.0	99.9	175	365
SO4--	0.36	0.01	4.75	531.4	96.6	1	153
SO4-- corr	0.32	-0.10	4.72	466.6	96.6	1	153
cond	12.65	2.40	115.70	18601.0	96.8	0	157
pH	5.06	4.22	7.39	12699.6	96.8	0	157

FR0013R Peyrusse Vieille France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.47	0.01	13.53	355.9	90.9	1	99
Cl-	1.26	0.03	13.51	966.7	90.9	1	99
K+	0.05	0.01	0.81	40.4	90.9	17	99
Mg++	0.109	0.010	0.950	83.7	90.9	16	99
NH4+	0.32	0.01	3.47	246.1	91.0	2	100
NO3-	0.25	0.03	2.86	188.2	90.9	0	99
Na+	0.75	0.01	7.70	575.8	90.9	2	99
Precip	-	0.1	57.0	764.7	99.9	225	365
SO4--	0.42	0.09	4.34	324.4	90.9	0	99
SO4-- corr	0.36	0.05	4.19	276.2	90.9	0	99
cond	14.77	4.00	84.60	11294.1	91.1	0	102
pH	5.05	4.08	7.51	6866.4	91.1	0	102

FR0014R Montandon France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.45	0.01	11.73	401.6	93.3	1	107
Cl-	0.31	0.03	5.58	280.8	93.3	14	107
K+	0.05	0.01	0.69	45.1	93.3	37	107
Mg++	0.040	0.010	0.440	36.1	93.3	33	107
NH4+	0.49	0.03	10.80	444.1	92.0	0	104
NO3-	0.35	0.04	6.85	318.4	93.3	0	107
Na+	0.19	0.01	3.40	171.9	93.3	11	107
Precip	-	0.1	49.2	903.1	99.9	221	365
SO4--	0.37	0.06	5.22	335.7	93.3	0	107
SO4-- corr	0.36	0.06	5.20	321.1	93.3	0	107
cond	11.93	2.40	119.80	10775.8	93.3	0	107
pH	5.12	4.09	7.13	6783.6	93.3	0	107

FR0015R La Tardière France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.38	0.01	6.80	314.9	94.8	1	100
Cl-	2.14	0.03	18.47	1778.2	94.8	1	100
K+	0.06	0.01	0.49	47.1	94.8	12	100
Mg++	0.165	0.010	1.400	137.1	94.8	6	100
NH4+	0.34	0.01	4.30	281.7	94.8	1	100
NO3-	0.20	0.03	2.15	166.4	94.8	0	100
Na+	1.22	0.01	10.77	1013.1	94.8	1	100
Precip	-	0.1	55.2	831.5	99.9	231	365
SO4--	0.40	0.07	2.68	332.6	94.8	0	100
SO4-- corr	0.30	0.02	2.61	248.3	94.8	0	100
cond	16.68	3.40	80.00	13868.3	95.0	0	104
pH	5.11	4.24	6.96	6398.2	95.0	0	104

FR0016R Le Casset France

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.80	0.01	44.88	1078.5	93.3	2	80
Cl-	0.20	0.03	10.40	118.0	93.3	20	80
K+	0.18	0.01	6.42	106.1	93.3	23	80
Mg++	0.074	0.010	1.010	44.2	93.3	31	80
NH4+	0.23	0.01	2.18	137.2	93.3	19	80
NO3-	0.24	0.03	1.52	142.0	93.3	0	80
Na+	0.09	0.01	2.35	54.5	93.3	20	80
Precip	-	0.1	65.5	600.1	99.9	272	365
SO4--	0.38	0.02	5.34	224.9	93.3	0	80
SO4-- corr	0.37	0.02	5.21	219.6	93.3	0	80
cond	12.55	1.90	161.70	7530.2	93.6	0	85
pH	5.40	4.16	7.78	2369.8	93.6	0	85

GB0002R Eskdalemuir United Kingdom

January 2003 - December 2003
Daily data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.13	0.01	3.12	148.5	100.0	5	190
Cl-	2.45	0.00	22.80	2789.4	100.0	0	190
K+	0.09	0.01	2.87	96.7	100.0	13	190
Mg++	0.158	0.002	1.515	180.7	100.0	1	190
NH4+	0.26	0.01	3.02	291.7	100.0	6	190
NO3-	0.21	0.01	2.63	240.5	100.0	2	190
Na+	1.43	0.04	12.75	1629.4	100.0	0	190
Precip	-	0.0	29.8	1140.3	99.9	175	365
SO4--	0.37	0.03	3.49	420.1	100.0	0	190
SO4-- corr	0.25	-0.18	3.23	286.6	100.0	0	190
cond	17.04	5.00	95.00	19433.4	99.8	26	182
pH	4.86	3.91	6.61	15602.8	100.0	0	190

GB0002R Eskdalemuir United Kingdom

January 2003 - December 2003
Biweekly data

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.13	0.07	0.54	122.1	99.5	0	23
Cl-	2.70	0.60	7.90	2614.8	100.0	0	24
K+	0.17	0.01	2.13	166.8	100.0	1	24
Mg++	0.173	0.047	0.512	168.0	100.0	0	24
NH4+	0.58	0.11	9.80	562.4	100.0	0	24
NO3-	0.27	0.11	2.10	258.4	100.0	0	24
Na+	1.53	0.34	4.64	1480.3	100.0	0	24
Precip	-	0.0	111.7	969.8	99.7	2	26
SO4--	0.47	0.17	3.60	454.1	100.0	0	24
SO4-- corr	0.34	0.14	3.45	332.4	100.0	0	24
cond	21.16	5.00	172.00	20519.3	100.0	2	24
pH	4.85	3.83	7.61	13679.6	100.0	0	24

GB0006R Lough Navar United Kingdom

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.27	0.06	1.77	237.6	100.0	0	23
Cl-	6.70	0.50	31.30	5856.6	100.0	0	23
K+	0.15	0.01	0.63	133.1	100.0	0	23
Mg++	0.435	0.005	2.080	380.2	100.0	1	23
NH4+	0.11	0.01	2.29	95.1	100.0	4	23
NO3-	0.10	0.01	1.70	88.2	100.0	4	23
Na+	3.81	0.23	17.63	3329.5	100.0	0	23
Precip	-	0.0	102.5	874.1	100.0	4	27
SO4--	0.48	0.17	1.46	419.6	100.0	0	23
SO4-- corr	0.17	-0.02	1.33	148.2	100.0	0	23
cond	29.27	5.00	117.00	25585.5	100.0	3	23
pH	5.21	4.44	6.51	5399.9	100.0	0	23

GB0013R Yarner Wood United Kingdom

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.20	0.07	1.22	117.0	100.0	0	18
Cl-	4.27	0.60	27.60	2505.1	100.0	0	18
K+	0.12	0.04	0.97	68.1	100.0	0	18
Mg++	0.294	0.048	2.006	172.4	100.0	0	18
NH4+	0.28	0.01	3.65	166.7	100.0	1	18
NO3-	0.27	0.05	2.96	157.9	100.0	0	18
Na+	2.52	0.69	16.62	1481.5	100.0	0	18
Precip	-	0.0	148.2	586.7	99.5	8	26
SO4--	0.54	0.11	2.91	314.6	100.0	0	18
SO4-- corr	0.33	0.00	2.20	191.7	100.0	0	18
cond	27.10	14.00	168.00	15898.6	98.8	0	17
pH	4.63	4.00	6.67	13659.1	100.0	0	18

GB0014R High Muffles United Kingdom

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.40	0.10	4.72	248.4	100.0	0	23
Cl-	4.03	0.20	17.40	2529.9	100.0	0	23
K+	0.13	0.05	1.00	83.7	100.0	0	23
Mg++	0.279	0.042	1.174	175.4	100.0	0	23
NH4+	0.57	0.14	3.13	358.1	100.0	0	23
NO3-	0.49	0.19	2.62	309.1	100.0	0	23
Na+	2.28	0.17	9.84	1434.9	100.0	0	23
Precip	-	0.0	60.8	628.6	99.7	3	26
SO4--	0.84	0.49	2.99	530.9	100.0	0	23
SO4-- corr	0.66	0.24	2.57	411.7	100.0	0	23
cond	32.87	14.00	113.00	20662.9	100.0	0	23
pH	4.64	4.20	6.72	14245.3	100.0	0	23

GB0015R Strathvaich Dam United Kingdom

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.20	0.06	0.63	214.8	100.0	0	24
Cl-	9.61	0.20	79.50	10190.0	100.0	0	24
K+	0.20	0.01	0.70	217.2	100.0	2	24
Mg++	0.537	0.024	2.063	569.8	100.0	0	24
NH4+	0.05	0.01	0.31	48.5	100.0	8	24
NO3-	0.10	0.01	0.36	109.1	100.0	2	24
Na+	5.51	0.10	44.00	5848.2	100.0	0	24
Precip	-	0.0	173.1	1060.9	100.0	2	26
SO4--	0.49	0.16	1.55	518.0	100.0	0	24
SO4-- corr	0.10	-0.00	0.55	110.7	100.0	0	24
cond	37.05	5.00	124.00	39304.2	100.0	1	24
pH	4.93	4.51	5.40	12523.5	100.0	0	24

HU0002R K-Puszta Hungary

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.21	0.06	6.65	296.2	100.0	0	50
Cl-	0.88	0.32	3.41	214.7	99.1	0	49
K+	0.20	0.03	2.27	48.0	100.0	3	50
Mg++	0.321	0.110	2.170	78.6	100.0	0	50
NH4+	0.53	0.02	4.53	128.9	99.8	2	49
NO3-	0.48	0.04	4.13	117.0	99.1	0	49
Na+	1.22	0.50	5.72	298.5	100.0	0	50
Precip	-	0.6	29.0	244.7	99.9	315	365
Precip off	-	1.00	32.00	357.1	99.9	315	365
SO4--	0.98	0.28	4.74	239.2	99.1	0	49
SO4-- corr	0.87	-0.20	4.40	214.0	99.1	0	49
cond	26.55	10.30	127.40	6495.6	100.0	0	50
pH	5.94	5.30	7.34	279.4	100.0	0	50

IE0001R Valentia Obs. Ireland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.41	0.03	8.40	555.4	97.3	5	194
Cl-	11.17	0.27	141.99	15261.9	97.3	0	194
K+	0.46	0.03	10.13	631.6	99.0	8	195
Mg++	0.806	0.025	10.103	1101.1	99.0	7	195
NH4+	0.27	0.02	14.57	370.5	99.0	52	195
NO3-	0.14	0.01	2.24	187.4	97.3	9	194
Na+	6.22	0.12	78.91	8498.3	97.3	0	194
Precip	-	0.0	49.7	1366.2	99.6	138	364
Precip off	-	0.00	52.30	1498.5	99.9	111	365
SO4--	0.75	0.04	6.74	1022.1	97.3	0	194
SO4-- corr	0.23	-0.11	3.84	316.1	97.3	0	194
cond	49.97	3.20	536.00	68272.1	97.3	0	194
pH	5.28	4.01	7.19	7189.6	97.3	0	194

IS0002R Irafoss Iceland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Na+	3.23	0.10	56.00	6334.7	100.0	0	194
Precip	-	0.0	68.0	1960.1	99.9	171	365
SO4--	0.38	0.05	12.30	746.0	100.0	5	194
SO4-- corr	0.11	-1.38	11.61	213.7	100.0	5	194
pH	5.45	3.80	7.40	6958.6	100.0	0	194

IT0001R Montelibretti Italy

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	2.88	0.20	19.73	1518.4	100.0	0	33
Cl-	3.94	0.08	16.76	2073.3	100.0	0	33
K+	0.64	0.09	5.32	334.6	93.5	0	32
Mg++	0.433	0.080	2.830	227.9	100.0	0	33
NH4+	0.69	0.08	13.11	363.3	100.0	0	33
NO3-	2.79	0.21	35.75	1467.5	100.0	0	33
Na+	2.48	0.04	9.73	1306.5	88.6	0	32
Precip	-	1.8	59.9	526.5	9.0	0	33
SO4--	2.32	0.17	32.67	1219.5	100.0	0	33
SO4-- corr	2.11	0.13	32.55	1111.9	100.0	0	33
cond	34.84	10.69	158.30	18341.2	99.7	0	32
pH	5.86	4.96	7.14	726.4	100.0	0	33

IT0004R Ispra Italy

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.59	0.01	22.64	677.0	99.8	0	62
Cl-	0.37	0.05	3.44	425.7	99.8	0	62
K+	0.12	0.01	1.16	140.8	99.8	0	62
Mg++	0.062	0.006	1.141	70.5	97.5	0	61
NH4+	0.74	0.05	11.24	842.3	99.8	0	62
NO3-	0.60	0.10	9.66	686.8	99.8	0	62
Na+	0.21	0.02	2.65	242.1	99.8	0	62
Precip	-	0.0	126.2	1139.1	99.9	302	365
SO4--	0.53	0.06	5.60	600.6	99.8	0	62
SO4-- corr	0.51	0.05	5.38	577.4	99.8	0	62
cond	18.26	4.68	125.89	20799.8	99.1	0	60
pH	4.76	3.88	8.12	19885.3	99.1	0	60

LT0015R Preila Lithuania

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.59	0.03	3.60	288.2	100.0	0	86
Cl-	2.35	0.14	31.82	1148.3	100.0	0	86
K+	0.17	0.03	1.10	84.5	100.0	0	86
NH4+	0.35	0.02	5.03	170.2	100.0	0	86
NO3-	0.46	0.07	4.46	222.9	100.0	0	86
Na+	1.49	0.10	17.17	726.5	100.0	0	86
Precip	-	0.0	28.1	488.3	99.9	279	365
SO4--	0.56	0.10	2.84	275.3	100.0	0	86
SO4-- corr	0.44	0.05	2.39	214.5	100.0	0	86
cond	22.83	4.00	152.00	11148.6	100.0	0	86
pH	4.80	4.06	6.25	7695.0	100.0	0	86

LV0010R Rucava Latvia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.28	0.02	2.21	197.5	94.0	0	104
Cl-	1.31	0.14	17.80	936.9	94.3	0	100
K+	0.09	0.02	0.71	65.8	94.0	1	104
Mg++	0.113	0.020	1.420	81.3	94.0	0	104
NH4+	0.50	0.01	4.91	355.8	95.8	1	112
NO3-	0.49	0.08	2.70	354.4	94.3	0	100
Na+	0.68	0.08	13.64	484.6	94.0	0	104
Precip	-	0.0	25.1	717.1	99.9	229	365
SO4--	0.54	0.10	2.23	389.6	94.3	0	100
SO4-- corr	0.48	0.07	2.11	341.7	94.3	0	100
cond	20.78	4.20	114.90	14903.7	96.4	0	113
pH	4.73	3.86	6.43	13219.1	96.1	0	112

LV0016R Zoseni Latvia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.47	0.05	6.12	303.4	90.1	0	102
Cl-	0.47	0.06	9.36	300.5	87.9	0	93
K+	0.14	0.02	1.14	90.6	90.1	2	102
Mg++	0.141	0.020	3.430	90.0	90.1	0	102
NH4+	0.47	0.01	6.18	301.3	98.0	2	152
NO3-	0.28	0.04	1.96	179.1	87.9	0	93
Na+	0.39	0.02	5.66	251.2	90.1	1	102
Precip	-	0.0	24.3	639.4	99.9	186	365
SO4--	0.38	0.04	5.90	245.2	87.9	0	93
SO4-- corr	0.35	0.02	5.51	223.8	87.9	0	93
cond	13.72	0.70	124.20	8770.7	96.5	0	134
pH	5.43	4.14	7.87	2373.1	95.4	0	127

NL0009R Kollumerwaard Netherlands

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.36	0.03	2.77	221.4	68.7	0	70
Cl-	5.01	0.11	42.71	3091.6	76.3	0	101
H+	-8.81	-171.30	37.10	-5434.2	76.8	0	111
K+	0.20	0.01	1.07	124.9	68.7	0	70
Mg++	0.308	0.012	1.655	190.2	68.7	0	70
NH4+	0.67	0.07	4.33	414.9	75.2	0	89
NO3-	0.41	0.00	4.08	252.7	76.3	0	101
Na+	2.53	0.05	13.99	1560.1	68.7	0	70
Precip	-	0.0	22.1	616.9	99.5	200	363
SO4--	0.64	0.16	2.29	395.3	76.3	0	101
SO4-- corr	0.41	0.07	2.06	250.0	76.3	0	101
cond	29.77	5.40	163.10	18367.4	70.1	0	62
pH	5.42	4.68	6.86	2351.3	76.8	0	111

NO0001R Birkenes Norway

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.12	0.01	1.20	158.1	99.6	3	160
Cl-	1.52	0.01	27.67	2083.2	99.6	1	160
K+	0.08	0.01	1.20	112.1	99.5	7	159
Mg++	0.111	0.005	1.752	153.2	99.6	2	160
NH4+	0.47	0.01	6.91	644.2	99.6	9	160
NO3-	0.50	0.01	6.42	693.1	99.6	8	160
Na+	0.88	0.03	15.36	1202.0	99.6	0	160
Precip	-	0.0	46.7	1374.5	99.9	167	364
SO4--	0.53	0.02	6.55	730.3	99.6	0	160
SO4-- corr	0.46	0.01	6.45	630.3	99.6	0	160
cond	22.61	2.90	133.70	31074.7	98.3	0	132
pH	4.59	3.74	6.05	35149.5	98.0	0	128

NO0008R Skreaadalen Norway

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.14	0.02	1.37	289.0	99.0	0	172
Cl-	2.08	0.01	15.91	4393.7	99.0	1	172
K+	0.16	0.02	2.54	341.6	99.0	0	172
Mg++	0.145	0.005	1.002	307.2	99.0	3	172
NH4+	0.28	0.01	3.47	599.7	99.0	1	172
NO3-	0.26	0.01	2.26	544.7	99.0	2	172
Na+	1.16	0.03	9.66	2447.6	99.0	0	172
Precip	-	0.0	58.6	2114.6	93.4	155	341
SO4--	0.33	0.01	1.78	703.1	99.0	1	172
SO4-- corr	0.24	-0.26	1.64	501.4	99.0	1	172
cond	16.75	2.40	93.00	35423.4	98.3	0	163
pH	4.89	3.89	6.91	27406.8	98.2	0	162

NO0015R Tustervatn Norway

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.16	0.03	1.20	244.0	98.5	0	194
Cl-	3.56	0.04	46.19	5379.5	98.7	0	195
K+	0.16	0.01	1.12	236.9	98.4	4	192
Mg++	0.258	0.005	2.826	390.5	98.7	4	195
NH4+	0.18	0.01	2.27	274.2	98.0	5	191
NO3-	0.07	0.01	1.51	111.8	98.6	21	194
Na+	2.02	0.03	24.83	3057.2	98.7	0	195
Precip	-	0.0	51.5	1512.8	99.9	123	365
SO4--	0.24	0.01	2.19	360.8	98.7	0	195
SO4-- corr	0.07	-0.28	1.39	111.0	98.7	0	195
cond	17.17	2.70	150.80	25981.2	96.9	0	162
pH	5.32	4.26	6.67	7306.3	95.9	0	154

NO0039R Kaarvatn Norway

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.12	0.01	1.43	196.5	99.7	3	161
Cl-	3.31	0.04	67.73	5503.1	99.7	0	161
K+	0.09	0.01	1.33	154.3	99.7	6	161
Mg++	0.233	0.005	4.360	387.8	99.7	1	161
NH4+	0.12	0.01	1.21	191.7	99.7	14	160
NO3-	0.08	0.01	1.03	128.3	99.7	14	161
Na+	1.82	0.03	38.31	3031.1	99.7	0	161
Precip	-	0.0	95.9	1664.3	99.4	199	363
SO4--	0.24	0.01	2.91	406.9	99.7	1	161
SO4-- corr	0.09	-0.30	1.14	153.8	99.7	1	161
cond	16.17	2.20	226.80	26912.6	99.1	0	147
pH	5.19	4.28	6.12	10855.8	99.0	0	144

NO0041R Osen Norway

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.09	0.02	0.56	56.9	99.7	0	97
Cl-	0.23	0.01	2.80	149.6	99.7	3	97
K+	0.09	0.01	0.57	58.4	99.2	1	95
Mg++	0.023	0.005	0.185	14.9	99.7	13	97
NH4+	0.20	0.02	1.30	133.3	99.3	0	96
NO3-	0.22	0.01	1.41	146.1	99.3	6	96
Na+	0.14	0.01	1.81	92.1	99.7	0	97
Precip	-	0.0	53.5	660.8	99.2	260	362
SO4--	0.22	0.02	1.38	142.9	99.7	0	97
SO4-- corr	0.20	-0.00	1.34	135.0	99.7	0	97
cond	9.67	2.80	55.30	6389.9	98.7	0	87
pH	4.87	4.06	5.90	8918.6	97.9	0	84

NO0055R Karasjok Norway

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.12	0.01	1.55	38.1	97.7	7	112
Cl-	1.00	0.07	36.66	306.1	81.7	0	106
K+	0.22	0.03	3.51	66.3	97.4	0	110
Mg++	0.066	0.005	2.630	20.4	97.7	1	112
NH4+	0.18	0.01	3.21	54.7	97.7	4	112
NO3-	0.14	0.01	1.32	43.1	81.7	4	106
Na+	0.54	0.04	23.56	165.8	97.7	0	112
Precip	-	0.0	19.1	307.0	99.9	221	365
SO4--	0.23	0.02	2.24	71.9	81.7	0	106
SO4-- corr	0.18	-0.06	1.92	56.2	81.7	0	106
cond	8.53	3.20	36.10	2620.1	89.3	0	70
pH	5.12	4.32	6.54	2344.6	89.0	0	69

NO0099R Lista Norway

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	1.02	0.10	12.61	479.8	99.7	0	75
Cl-	32.78	1.32	304.00	15401.6	99.7	0	75
K+	0.80	0.04	11.17	376.7	99.7	0	75
Mg++	2.221	0.090	25.620	1043.8	99.7	0	75
NH4+	0.85	0.01	16.35	399.8	99.7	3	75
NO3-	0.83	0.01	15.66	389.6	99.7	1	75
Na+	17.45	0.73	196.00	8199.2	99.7	0	75
Precip	-	0.0	64.8	469.9	49.3	99	180
SO4--	2.03	0.33	25.08	952.8	99.7	0	75
SO4-- corr	0.58	-1.06	8.68	271.7	99.7	0	75
cond	121.34	9.80	610.60	57018.1	98.3	0	64
pH	4.70	3.70	6.06	9488.2	97.6	0	61

PL0002R Jarczew Poland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.27	0.00	3.10	119.3	98.5	0	130
Cl-	0.41	0.10	6.00	182.1	99.0	0	139
K+	0.11	0.02	1.75	48.9	98.5	0	130
Mg++	0.042	0.004	0.440	18.4	98.5	0	130
NH4+	0.78	0.11	8.50	342.3	99.0	0	139
NO3-	0.47	0.12	5.54	205.2	99.0	0	139
Na+	0.15	0.02	2.39	64.8	98.5	0	130
Precip	-	0.0	20.3	438.9	99.9	205	365
SO4--	0.72	0.09	8.24	314.4	99.0	0	139
SO4-- corr	0.70	0.09	8.19	306.0	99.0	0	139
cond	19.64	4.50	192.30	8621.9	99.0	0	139
pH	4.80	3.55	7.28	6972.4	99.0	0	139

PL0003R Sniezka Poland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.87	0.10	11.60	659.3	97.9	0	155
Cl-	0.86	0.10	15.40	653.2	98.8	0	164
K+	0.26	0.02	4.04	196.1	97.9	0	155
Mg++	0.178	0.016	2.370	134.5	97.9	0	155
NH4+	0.46	0.06	4.57	349.8	98.8	0	164
NO3-	1.04	0.23	11.15	784.3	98.8	0	164
Na+	0.73	0.07	14.00	553.0	97.9	0	155
Precip	-	0.0	27.0	755.7	99.9	158	365
SO4--	0.85	0.21	5.97	644.0	98.8	0	164
SO4-- corr	0.79	0.19	5.57	596.0	98.8	0	164
cond	27.65	6.90	206.10	20897.3	98.8	0	164
pH	4.63	3.90	6.46	17765.4	98.7	0	163

PL0004R Leba Poland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.21	0.00	2.60	122.1	97.6	0	127
Cl-	1.59	0.10	23.70	905.0	97.6	0	128
K+	0.10	0.02	2.43	54.4	97.6	0	127
Mg++	0.112	0.006	1.319	63.9	97.6	0	127
NH4+	0.46	0.05	5.74	260.8	97.6	0	128
NO3-	0.42	0.06	5.40	241.6	97.6	0	128
Na+	0.85	0.03	13.79	482.1	97.6	0	127
Precip	-	0.0	30.2	568.9	99.9	206	365
SO4--	0.52	0.06	8.69	297.2	97.6	0	128
SO4-- corr	0.45	0.05	8.48	256.6	97.6	0	128
cond	21.84	5.30	190.00	12422.3	97.6	0	128
pH	4.71	3.58	7.03	10964.8	97.6	0	128

PL0005R Diabla Gora Poland

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.20	0.00	3.90	111.9	97.8	0	116
Cl-	0.45	0.10	10.10	258.6	98.2	0	130
K+	0.12	0.02	6.39	68.3	97.8	0	116
Mg++	0.045	0.004	0.736	25.9	97.8	0	116
NH4+	0.44	0.01	5.33	253.9	98.9	2	131
NO3-	0.35	0.04	4.29	202.7	98.9	0	131
Na+	0.19	0.02	5.95	107.6	97.8	0	116
Precip	-	0.0	33.1	571.4	99.9	214	365
Precip off	-	0.00	33.70	580.2	99.9	213	365
SO4--	0.47	0.09	7.49	269.5	98.9	0	131
SO4-- corr	0.45	0.06	7.38	258.8	98.9	0	131
cond	13.13	2.00	48.00	7504.9	83.4	0	86
pH	4.79	3.58	6.91	9267.5	99.7	0	148

PT0001R Braganca Portugal

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.62	0.05	4.90	522.4	76.7	8	42
Cl-	0.43	0.00	1.40	367.4	76.7	1	42
K+	0.11	0.04	0.67	92.5	76.7	22	42
Mg++	0.140	0.015	0.330	118.6	76.7	3	42
NH4+	0.23	0.01	1.23	197.7	76.7	8	42
NO3-	0.19	0.01	0.83	162.1	76.7	7	42
Na+	0.28	0.01	1.02	239.6	76.7	6	42
Precip off	-	0.00	48.40	844.6	99.9	229	365
SO4--	0.29	0.03	1.45	244.1	76.7	4	42
SO4-- corr	0.26	-0.05	1.40	218.3	76.7	4	42
cond	9.61	2.00	41.00	8120.0	76.7	0	42
pH	5.75	4.76	6.72	1507.6	76.7	0	42

PT0003R V. Do Castelo Portugal

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.61	0.05	5.80	955.4	93.9	4	97
Cl-	5.00	0.50	27.50	7858.8	92.3	0	96
K+	0.16	0.04	1.77	254.2	93.9	33	97
Mg++	0.467	0.040	1.920	734.1	93.9	0	97
NH4+	0.14	0.01	2.40	213.3	93.9	31	97
NO3-	0.24	0.01	1.56	372.2	93.9	11	97
Na+	3.51	0.39	18.11	5520.4	93.9	0	97
Precip off	-	0.00	60.60	1571.9	99.9	213	365
SO4--	0.58	0.15	3.82	915.8	93.9	0	97
SO4-- corr	0.30	-0.27	3.33	475.5	93.9	0	97
cond	26.71	6.00	92.00	41991.2	93.9	0	97
pH	5.40	4.33	8.26	6263.6	93.9	0	97

PT0004R Monte Velho Portugal

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.50	0.05	6.10	285.8	91.3	2	36
Cl-	9.85	1.10	60.50	5669.7	91.3	0	36
K+	0.19	0.04	0.60	108.4	91.3	8	36
Mg++	0.674	0.180	2.430	388.1	91.3	0	36
NH4+	0.08	0.01	0.85	46.1	91.3	13	36
NO3-	0.16	0.01	0.96	94.4	91.3	5	36
Na+	5.47	0.64	18.10	3147.8	91.3	0	36
Precip off	-	0.00	45.70	575.5	99.9	310	365
SO4--	0.67	0.11	1.72	384.5	91.3	0	36
SO4-- corr	0.25	0.00	1.22	143.0	91.3	0	36
cond	36.55	9.00	106.00	21037.3	91.3	0	36
pH	5.30	4.60	7.12	2897.4	91.3	0	36

RU0001R Janiskoski Russian Federation

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.28	0.02	1.72	124.4	100.0	0	92
Cl-	1.39	0.15	59.00	608.2	100.0	0	92
K+	0.56	0.08	5.03	245.7	100.0	0	92
Mg++	0.088	0.001	2.980	38.5	100.0	0	92
NH4+	0.17	0.02	1.71	76.3	100.0	0	92
NO3-	0.09	0.01	0.53	39.2	100.0	0	92
Na+	1.13	0.14	14.50	494.2	100.0	0	92
Precip	-	0.0	27.7	438.9	99.9	273	365
SO4--	0.46	0.08	3.96	203.7	100.0	0	92
SO4-- corr	0.40	-0.59	3.41	174.4	100.0	0	92
cond	17.62	4.80	324.50	7734.8	100.0	0	92
pH	4.78	4.13	7.65	7251.2	100.0	0	92

RU0013R Pinega Russian Federation

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.55	0.10	8.65	253.7	100.0	0	139
Cl-	1.09	0.04	79.15	502.1	100.0	0	139
K+	0.42	0.03	4.86	192.0	100.0	0	139
Mg++	0.149	0.010	6.260	68.7	100.0	0	139
NH4+	0.24	0.02	3.08	109.4	100.0	0	139
NO3-	0.10	0.01	1.11	48.5	100.0	0	139
Na+	0.80	0.12	40.56	367.9	100.0	0	139
Precip	-	0.0	33.6	460.6	99.9	228	365
SO4--	0.49	0.03	3.39	225.2	100.0	0	139
SO4-- corr	0.43	-0.53	3.33	200.5	100.0	0	139
cond	17.10	3.20	239.20	7875.8	99.7	0	137
pH	5.01	4.17	7.61	4469.9	98.7	0	123

RU0016R Shepeljovo Russian Federation

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.71	0.02	9.24	446.5	100.0	0	120
Cl-	8.62	0.23	330.80	5413.7	100.0	0	120
K+	0.59	0.09	39.19	370.5	100.0	0	120
Mg++	0.570	0.010	19.790	357.8	100.0	0	120
NH4+	0.28	0.02	2.70	177.7	100.0	0	120
NO3-	0.33	0.01	8.93	206.5	100.0	0	120
Na+	4.29	0.13	144.85	2693.7	100.0	0	120
Precip	-	0.0	27.0	627.9	99.9	245	365
SO4--	0.91	0.20	13.80	573.0	100.0	0	120
SO4-- corr	0.57	-8.63	7.72	356.0	100.0	0	120
cond	40.53	5.60	906.00	25446.6	100.0	0	120
pH	4.96	4.01	7.08	6940.6	100.0	0	120

RU0018R Danki Russian Federation

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.49	0.14	3.96	308.8	99.9	0	134
Cl-	0.33	0.03	5.59	208.6	100.0	0	135
K+	0.25	0.07	2.77	158.1	99.9	0	134
Mg++	0.068	0.010	0.890	43.2	99.9	0	134
NH4+	0.31	0.02	4.51	195.9	99.9	0	134
NO3-	0.25	0.01	1.70	157.2	100.0	0	135
Na+	0.29	0.06	2.53	186.0	99.9	0	134
Precip	-	0.0	34.3	633.4	99.9	230	365
SO4--	0.41	0.07	6.23	258.4	100.0	0	135
SO4-- corr	0.38	-0.02	6.14	242.7	100.0	0	135
cond	13.05	3.90	91.70	8264.9	99.4	0	132
pH	5.01	3.84	7.55	6164.0	98.7	0	120

SE0005R Bredkalen Sweden

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.16	0.01	1.90	60.6	99.7	8	43
Cl-	0.33	0.01	9.80	123.0	99.9	5	45
K+	0.04	0.02	0.35	14.7	99.7	32	43
Mg++	0.041	0.005	0.170	15.6	99.7	6	43
NH4+	0.14	0.01	0.85	51.1	99.7	3	43
NO3-	0.17	0.02	0.70	62.7	99.9	0	45
Na+	0.07	0.03	0.83	27.3	99.7	29	43
Precip	-	0.0	34.8	377.7	99.9	15	62
SO4--	0.22	0.03	1.32	83.6	99.9	0	45
SO4-- corr	0.21	0.01	0.86	79.4	99.9	0	45
cond	9.35	2.00	28.00	3530.8	99.7	0	42
pH	4.91	4.37	6.75	4705.0	100.0	0	47

SE0011R Vavihill Sweden

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.19	0.01	1.26	117.7	100.0	1	46
Cl-	1.53	0.06	19.29	930.4	100.0	0	46
K+	0.10	0.02	0.67	63.5	100.0	19	46
Mg++	0.134	0.005	1.320	81.1	100.0	1	46
NH4+	0.62	0.08	2.66	376.5	100.0	0	46
NO3-	0.52	0.12	2.36	317.2	100.0	0	46
Na+	0.90	0.03	12.22	548.4	100.0	6	46
Precip	-	0.0	51.4	606.7	99.9	16	62
SO4--	0.53	0.15	1.55	319.1	100.0	0	46
SO4-- corr	0.45	0.09	1.33	271.5	100.0	0	46
cond	21.46	8.00	89.00	13021.4	99.9	0	45
pH	4.82	4.11	6.57	9289.5	100.0	0	46

SE0014R Råö Sweden

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.22	0.01	4.16	134.0	99.4	5	121
Cl-	3.18	0.15	72.14	1911.5	99.4	0	122
K+	0.13	0.02	1.39	77.8	99.4	28	121
Mg++	0.240	0.040	4.580	144.1	99.4	0	121
NH4+	0.45	0.01	3.05	272.9	98.9	2	115
NO3-	0.49	0.04	2.71	296.2	99.5	0	123
Na+	1.79	0.03	45.19	1074.1	98.7	7	116
Precip	-	0.0	28.1	600.8	99.9	226	365
SO4--	0.55	0.05	3.56	331.4	99.5	0	123
SO4-- corr	0.40	-0.22	2.88	238.5	99.4	0	122
cond	27.82	3.00	193.00	16712.4	97.5	0	105
pH	4.71	3.80	6.98	11854.9	99.9	0	134

SI0008R Iskrba Slovenia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.30	0.01	8.98	285.2	98.7	1	100
Cl-	0.45	0.01	10.16	430.5	98.9	1	108
K+	0.04	0.01	0.63	41.0	98.7	27	100
Mg++	0.057	0.005	0.568	54.4	98.7	7	100
NH4+	0.32	0.02	2.05	310.0	98.7	0	100
NO3-	0.33	0.03	3.53	316.5	98.8	0	107
Na+	0.26	0.01	3.96	252.5	98.7	3	100
Precip	-	0.0	46.9	960.0	99.6	235	364
Precip off	-	0.00	109.20	1135.8	99.9	230	365
SO4--	0.44	0.05	4.90	423.6	98.9	0	108
SO4-- corr	0.42	0.05	4.87	401.4	98.9	0	108
cond	15.46	4.00	94.00	14841.9	97.7	0	88
pH	4.81	3.79	6.88	14954.7	97.7	0	88

SK0002R Chopok Slovakia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.36	0.02	4.98	300.1	90.6	0	131
Cl-	0.36	0.02	6.89	299.0	91.0	0	131
K+	0.26	0.01	1.60	218.4	90.9	0	131
Mg++	0.054	0.004	0.583	45.4	91.2	6	132
NH4+	0.59	0.03	3.77	494.9	91.2	0	133
NO3-	0.43	0.05	3.21	364.5	91.0	0	131
Na+	0.29	0.02	3.83	240.4	91.2	0	133
Precip	-	0.1	43.3	840.3	99.9	170	365
SO4--	0.93	0.11	4.99	778.3	91.0	0	131
SO4-- corr	0.90	0.08	4.67	759.0	91.0	0	131
cond	24.02	5.50	91.60	20187.0	78.5	0	93
pH	4.57	3.90	7.16	22525.5	79.1	0	94

SK0004R Stara Lesna Slovakia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.41	0.04	3.13	218.9	85.7	0	74
Cl-	0.36	0.06	1.46	188.8	84.5	0	72
K+	0.34	0.03	1.59	182.7	86.0	0	74
Mg++	0.066	0.016	0.410	34.8	85.0	0	75
NH4+	0.78	0.03	3.29	411.8	82.6	0	73
NO3-	0.42	0.04	3.29	223.8	84.3	0	71
Na+	0.27	0.05	2.90	141.7	86.5	0	76
Precip	-	0.1	34.5	530.0	99.9	243	365
SO4--	0.87	0.21	3.86	459.8	84.7	0	73
SO4-- corr	0.84	0.20	3.24	444.3	84.5	0	72
cond	24.73	9.10	86.30	13107.3	78.4	0	51
pH	4.71	3.86	6.89	10449.0	76.9	0	50

SK0005R Liesek Slovakia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.46	0.08	1.98	293.2	93.8	0	92
Cl-	0.55	0.11	2.58	348.0	93.1	0	88
K+	0.37	0.03	2.19	234.3	92.3	0	89
Mg++	0.065	0.015	0.298	41.2	93.8	0	92
NH4+	0.55	0.01	2.24	348.3	93.4	0	90
NO3-	0.52	0.09	1.87	327.3	93.4	0	89
Na+	0.32	0.03	2.51	203.1	92.4	2	87
Precip	-	0.1	49.8	633.9	99.9	205	365
SO4--	0.92	0.19	3.05	582.8	93.4	0	89
SO4-- corr	0.89	0.18	2.98	563.3	93.4	0	89
cond	24.92	8.90	57.20	15796.6	86.9	0	64
pH	4.57	4.04	6.16	17129.3	86.9	0	64

SK0006R Starina Slovakia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.49	0.05	3.72	278.4	87.0	0	96
Cl-	0.39	0.08	2.28	222.1	86.9	0	96
K+	0.31	0.09	1.38	179.4	87.1	0	97
Mg++	0.058	0.005	0.385	33.5	87.0	5	96
NH4+	0.65	0.04	3.62	374.4	86.4	0	95
NO3-	0.54	0.05	3.62	310.6	86.6	0	95
Na+	0.29	0.02	1.72	168.9	86.9	1	96
Precip	-	0.1	40.2	572.6	99.9	226	365
SO4--	0.90	0.18	3.22	517.0	86.5	0	94
SO4-- corr	0.88	0.17	3.17	502.9	86.5	0	94
cond	24.23	8.50	87.10	13870.3	77.1	0	64
pH	4.57	3.95	6.22	15472.9	76.8	0	63

SK0007R Topoliniky Slovakia

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	0.62	0.09	2.68	226.3	97.2	0	69
Cl-	0.35	0.01	1.86	129.2	96.1	1	67
K+	0.29	0.02	4.35	105.8	98.3	1	69
Mg++	0.086	0.013	0.378	31.5	98.4	0	70
NH4+	0.60	0.02	2.03	219.8	98.4	0	70
NO3-	0.47	0.03	1.43	174.3	97.0	0	68
Na+	0.27	0.01	1.81	98.4	97.9	1	69
Precip	-	0.1	25.4	367.2	99.9	286	365
SO4--	0.85	0.08	2.74	313.9	97.2	0	69
SO4-- corr	0.83	0.07	2.65	304.5	97.2	0	69
cond	21.40	5.60	64.70	7858.7	84.7	0	47
pH	4.85	4.08	6.41	5149.8	84.7	0	47

TR0001R Cubuk II Turkey

January 2003 - December 2003

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl
Ca++	2.09	0.49	13.60	539.2	99.2	0	55
Cl-	1.22	0.12	7.75	315.3	99.9	0	63
K+	0.30	0.10	1.72	78.0	99.3	0	55
Mg++	0.146	0.037	0.924	37.6	99.2	0	55
NH4+	0.48	0.12	1.94	124.0	99.8	0	61
NO3-	0.38	0.13	2.88	98.0	99.9	0	63
Na+	0.86	0.23	4.21	221.4	99.3	0	56
Precip	-	0.1	22.6	257.9	71.2	196	260
SO4--	1.19	0.63	6.80	306.2	99.9	0	63
SO4-- corr	1.12	0.51	6.57	289.6	99.9	0	63
cond	24.77	10.09	161.30	6387.8	98.0	0	47
pH	5.67	4.68	7.91	550.0	95.9	0	45

Annex 3

Annual statistics on gases and aerosol data

AT0002R Illmitz Austria

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.69	0.29	0.63	1.54	0.00	0.28	0.66	1.21	1.94	98.3	0	359
NH3	2.33	1.26	1.96	1.94	0.01	0.66	2.16	4.51	7.27	94.4	0	345
NH4+	0.96	0.81	0.72	2.15	0.07	0.19	0.76	2.61	5.98	98.3	0	359
NO2	2.83	1.65	2.45	1.71	0.66	1.10	2.35	5.98	11.77	96.7	0	353
NO3-	0.25	0.45	0.13	2.78	0.01	0.03	0.11	0.88	4.74	98.3	0	359
PM1	14.11	8.36	11.95	1.81	1.50	4.22	12.79	30.04	50.58	73.2	0	267
PM10	31.13	21.34	25.79	1.84	4.64	8.81	25.45	72.70	137.22	99.7	0	364
PM25	24.68	19.49	19.51	1.96	3.40	6.01	19.23	62.32	132.92	97.0	0	354
SO2	1.59	1.86	1.07	2.36	0.06	0.32	0.98	5.02	18.90	98.3	0	359
SO4--	1.13	0.74	0.93	1.91	0.09	0.28	0.97	2.31	5.25	98.3	0	359

AT0004R St. Koloman Austria

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	2.12	1.86	1.49	2.53	0.01	0.31	1.49	5.75	14.51	95.6	0	349
PM10	13.62	10.36	10.24	2.25	0.50	2.23	11.54	36.64	72.58	97.8	0	357

AT0005R Vorhegg Austria

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.27	0.85	1.07	1.77	0.27	0.43	1.00	3.01	5.27	92.6	0	338
PM10	12.31	9.19	9.34	2.23	0.79	2.00	11.03	26.94	83.42	88.8	0	324

AT0030R Pillersdorf Austria

January 2003 - December 2003

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	6.65	33.67	95.1	0	8334

BE0001R Offagne Belgium

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.81	3.00	4.07	1.78	0.60	1.50	4.00	10.90	23.70	90.1	0	7891

BE0032R Eupen Belgium

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	5.88	3.85	4.77	2.01	0.00	1.20	5.20	13.40	35.60	94.1	0	8245

BE0035R Vezin Belgium

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	6.87	3.60	6.07	1.67	0.00	2.40	6.10	14.00	27.10	72.8	0	6380

CH0001G Jungfraujoch Switzerland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.11	0.13	0.08	1.94	0.02	0.03	0.08	0.29	1.40	78.4	0	286
SO2	0.08	0.06	0.07	1.70	0.01	0.03	0.06	0.18	0.48	99.7	1	364
SO4--	0.17	0.18	0.09	3.42	0.01	0.01	0.09	0.58	0.90	100.0	40	365
SPM	5.22	6.66	2.85	3.07	0.50	0.50	2.90	17.90	40.30	94.5	57	345

CH0002R Payerne Switzerland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	5.15	2.83	4.46	1.72	0.89	1.85	4.35	10.92	16.36	100.0	0	365
PM10	25.29	16.70	21.41	1.77	4.09	8.10	21.82	51.41	122.40	98.6	0	360
PM25	19.75	15.50	15.88	1.91	2.80	5.15	16.10	45.10	111.90	95.6	0	349
SO2	0.59	0.40	0.48	1.93	0.07	0.15	0.47	1.40	2.66	100.0	0	365
SO4--	0.85	0.55	0.70	1.90	0.10	0.21	0.76	1.83	3.94	100.0	0	365

CH0003R Tanikon Switzerland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.95	2.86	4.26	1.73	0.94	1.80	4.27	10.13	18.70	100.0	0	365
PM10	23.23	14.01	19.71	1.80	2.36	6.79	21.21	50.15	108.96	99.7	0	364

CH0004R Chaumont Switzerland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	2.74	1.49	2.41	1.66	0.37	1.11	2.29	6.25	8.52	99.2	0	362
PM1	8.54	5.07	7.12	1.89	1.00	2.20	7.80	17.10	36.40	98.4	0	359
PM10	14.71	9.17	11.90	2.01	1.66	3.20	13.07	32.43	57.10	98.9	0	361
PM25	10.95	7.16	8.90	1.96	1.40	2.60	9.50	24.36	49.90	97.5	0	356
SO2	0.70	0.53	0.52	2.30	0.06	0.09	0.58	1.68	3.29	99.5	0	363

CH0005R Rigi Switzerland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.92	0.81	0.66	2.37	0.04	0.15	0.71	2.46	5.65	97.3	0	355
NH3+NH4+	2.33	1.74	1.65	2.56	0.09	0.25	2.05	5.03	11.76	97.3	0	355
NO2 chemilum	2.37	1.61	1.95	2.04	0.20	0.75	1.84	6.07	10.46	96.7	0	353
NO2 cranox	1.38	1.31	1.03	2.04	0.11	0.42	0.87	4.50	9.16	81.9	0	299
PM10	15.22	10.61	11.92	2.11	0.50	2.90	12.96	35.34	61.94	100.0	1	365
SO2	0.42	0.30	0.34	1.93	0.06	0.11	0.33	1.00	2.33	99.2	0	362
SO4--	0.67	0.45	0.52	2.20	0.04	0.11	0.57	1.56	3.08	98.6	0	360

CS0005R Kamenicki Vis Serbia and Montenegro

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	2.66	0.97	2.49	1.45	1.10	1.30	2.60	4.48	6.80	88.4	0	323
SO2	4.38	2.78	3.82	1.62	2.30	2.50	3.30	11.78	16.60	90.8	0	332

CZ0001R Svratouch Czech Republic

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.94	0.71	0.75	2.03	0.02	0.23	0.77	2.10	5.26	99.4	0	363
NH3+NH4+	1.98	1.32	1.64	1.90	0.08	0.54	1.71	4.19	10.02	99.9	0	365
NO2	2.64	1.45	2.28	1.74	0.75	0.75	2.10	5.80	7.90	98.6	40	360
SO2	1.80	1.99	1.10	2.82	0.10	0.20	1.20	6.58	12.60	99.4	0	363

CZ0003R Kosetice Czech Republic

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.92	0.69	0.76	1.86	0.14	0.25	0.77	2.10	4.70	99.4	0	363
NH3+NH4+	2.21	1.35	1.82	1.92	0.23	0.54	1.94	4.81	8.54	99.9	0	365
NO2	2.73	1.07	2.54	1.46	0.75	1.50	2.40	4.90	8.20	99.7	8	364
SO2	1.23	1.50	0.77	2.60	0.10	0.20	0.70	4.32	9.20	99.4	0	363

DE0001R Westerland Germany

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.63	1.22	1.23	2.20	0.09	0.32	1.39	4.63	5.82	57.0	2	208
NH3+NH4+	3.01	2.00	2.39	2.06	0.13	0.74	2.43	7.32	10.07	55.6	2	203
NO2	2.71	2.43	1.74	2.86	0.06	0.24	2.10	7.87	13.32	93.4	0	341
PM10	22.79	16.62	18.83	1.81	4.00	7.68	18.00	59.80	100.00	96.2	0	351
SO2	0.74	0.55	0.56	2.24	0.01	0.16	0.59	1.84	3.21	83.8	0	306
SO4--	1.21	1.11	0.93	2.01	0.14	0.30	0.92	3.74	7.24	84.4	0	308
NO2	2.71	2.43	1.74	2.86	0.06	0.24	2.10	7.87	13.32	93.4	0	341

DE0002R Langenbrugge Germany

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	2.99	2.23	2.44	1.85	0.51	0.96	2.25	8.14	13.14	98.9	0	361
PM10	21.59	17.70	17.36	1.88	2.47	6.14	16.35	53.66	123.42	99.2	0	362
PM25	16.48	15.02	12.49	2.06	0.94	3.99	12.23	44.43	102.47	97.5	0	356
SO2	0.93	0.92	0.65	2.33	0.03	0.15	0.65	2.75	5.95	98.9	1	361

DE0003R Schauinsland Germany

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.30	1.04	0.87	2.83	0.05	0.07	1.11	3.45	5.46	58.1	17	212
NH3+NH4+	1.65	1.24	1.05	3.20	0.04	0.09	1.41	3.80	6.01	58.1	33	212
NO2	0.99	0.75	0.80	1.96	0.06	0.30	0.78	2.73	6.36	93.2	0	340
PM10	13.05	9.27	9.67	2.32	1.60	1.70	11.10	31.66	46.80	95.3	0	348
PM25	10.14	7.42	7.51	2.29	1.60	1.70	8.60	24.50	38.70	94.5	0	345
SO2	0.51	0.50	0.33	2.72	0.01	0.07	0.38	1.41	3.86	98.1	0	358
SO4--	0.77	0.60	0.52	2.81	0.01	0.08	0.58	1.99	2.90	99.2	3	362

DE0004R Deuselbach Germany

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.40	1.03	1.10	2.05	0.08	0.31	1.08	4.09	4.81	57.0	2	208
NH3+NH4+	2.41	1.18	2.03	1.98	0.12	0.56	2.31	4.32	5.73	57.0	5	208
NO2	2.79	1.79	2.35	1.78	0.57	0.99	2.25	6.72	12.36	98.4	0	359
PM10	18.51	10.16	15.91	1.77	2.00	5.50	16.65	37.90	56.50	98.6	0	360
PM25	13.75	8.60	11.40	1.88	1.30	3.71	11.75	31.59	49.10	98.6	0	360
SO2	1.34	1.16	0.94	2.45	0.03	0.19	1.02	3.91	6.87	98.9	0	361
SO4--	1.16	0.70	0.97	1.85	0.07	0.35	1.01	2.42	4.27	99.5	0	363

DE0005R Brotjacklriegel Germany

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.44	1.09	1.16	1.91	0.09	0.45	1.14	3.81	7.95	95.6	0	349
PM10	14.10	9.80	11.00	2.16	0.00	2.90	12.00	30.00	68.00	97.8	0	357
SO2	1.24	0.83	1.02	1.89	0.15	0.35	1.05	2.83	5.75	90.1	0	329

DE0007R Neuglobsow Germany

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.06	0.92	0.78	2.24	0.06	0.24	0.72	3.17	5.04	57.5	6	210
NH3+NH4+	1.83	0.97	1.51	2.10	0.01	0.54	1.68	3.79	5.15	57.0	6	208
NO2	2.07	1.65	1.65	1.91	0.45	0.66	1.50	5.82	9.33	98.1	0	358
PM10	17.64	13.68	13.93	1.98	1.00	4.00	14.00	47.70	85.00	100.0	0	365
SO2	0.86	1.24	0.43	3.22	0.01	0.09	0.40	3.75	8.40	92.3	0	337
SO4--	1.18	1.04	0.83	2.52	0.00	0.15	0.90	3.42	5.92	100.0	1	365

DE0008R Schmucke Germany

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.96	1.44	1.58	1.88	0.33	0.66	1.41	5.22	8.22	94.5	0	345
PM10	13.21	9.34	9.85	2.37	1.00	2.00	11.00	29.00	63.00	99.7	0	364
SO2	1.12	1.05	0.85	2.04	0.15	0.30	0.80	2.90	9.35	100.0	0	365

DE0009R Zingst Germany

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.37	1.07	1.05	2.14	0.06	0.34	1.05	4.14	5.38	57.0	3	208
NH3+NH4+	2.51	1.58	1.95	2.27	0.09	0.45	2.23	5.62	8.06	57.0	7	208
NO2	2.44	1.69	2.01	1.85	0.42	0.75	1.95	5.78	10.83	95.6	0	349
PM10	19.78	15.06	15.77	1.95	2.16	5.16	15.10	52.54	108.86	99.7	0	364
SO2	1.00	1.20	0.66	2.42	0.01	0.19	0.65	3.38	10.29	99.2	0	362
SO4--	1.19	0.99	0.90	2.14	0.03	0.26	0.95	3.29	6.07	99.2	0	362

DK0003R Tange Denmark

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.95	0.92	0.64	2.54	0.04	0.13	0.70	2.68	5.43	95.3	0	348
NH3+NH4+	2.66	1.82	2.21	1.82	0.48	0.87	2.10	6.43	11.73	90.3	0	330
Na+	1.00	0.91	0.67	2.58	0.06	0.13	0.66	2.81	5.44	95.0	0	347
SO2	0.35	0.47	0.20	2.77	0.02	0.04	0.18	1.40	3.48	95.3	0	348
SO4--	0.94	0.89	0.70	2.15	0.12	0.20	0.72	2.66	6.61	95.3	0	348
SO4-- corr	0.86	0.91	0.57	2.58	-0.06	0.10	0.62	2.64	6.57	95.0	0	347

DK0005R Keldsnor Denmark

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	1.32	1.32	0.89	2.51	0.04	0.17	0.95	3.68	10.08	97.7	0	357
NH3+NH4+	2.93	2.38	2.31	1.97	0.39	0.72	2.48	6.97	18.62	96.4	0	352
Na+	1.60	0.95	1.31	1.97	0.06	0.37	1.42	3.41	4.93	96.6	0	353
PM10	24.84	14.95	21.29	1.74	3.43	8.56	20.98	51.66	93.51	82.1	1	300
SO2	0.88	0.81	0.57	2.86	0.00	0.08	0.62	2.60	5.88	98.0	1	358
SO4--	1.23	1.04	0.94	2.11	0.15	0.25	1.00	3.31	7.68	97.7	0	357
SO4-- corr	1.07	0.95	0.73	2.58	0.01	0.12	0.88	2.96	6.47	96.6	0	353

DK0008R Anholt Denmark

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.85	0.87	0.57	2.53	0.01	0.11	0.64	2.14	7.03	99.9	1	365
NH3+NH4+	1.31	1.25	0.91	2.45	0.06	0.19	1.00	3.12	10.66	99.9	0	365
NO2	1.88	1.56	1.39	2.22	0.07	0.36	1.35	5.53	8.32	99.1	0	362
Na+	1.40	1.05	1.03	2.33	0.04	0.24	1.07	3.66	5.77	99.4	1	363
SO2	0.62	0.61	0.40	2.70	0.00	0.08	0.40	1.99	4.36	99.9	1	365
SO4--	0.94	0.76	0.74	2.00	0.11	0.26	0.76	2.49	5.17	99.6	0	364
SO4-- corr	0.83	0.78	0.55	2.65	0.02	0.09	0.66	2.44	5.14	99.1	0	362

EE0009R Lahemaa Estonia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.91	0.81	0.69	2.07	0.06	0.23	0.67	2.44	6.00	97.3	0	355
SO2	0.75	1.05	0.45	2.76	0.04	0.10	0.45	2.30	12.50	95.6	2	349

EE0011R Vilsandi Estonia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.96	0.81	0.72	2.16	0.03	0.20	0.72	2.42	6.64	97.0	0	354
SO2	0.53	0.73	0.30	2.79	0.04	0.05	0.30	1.96	5.70	98.1	7	358

ES0007R Viznar Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.42	0.33	0.33	2.03	0.09	0.12	0.34	0.98	2.62	97.7	0	357
NH3+NH4+	0.39	0.33	0.29	2.13	0.01	0.08	0.29	0.99	2.65	97.7	1	357
NO2	2.43	2.35	1.69	2.37	0.03	0.43	1.63	7.19	24.20	98.5	0	8632
NO3-	0.45	0.28	0.38	1.82	0.08	0.12	0.41	0.89	2.54	88.4	0	323
PM10	21.42	15.84	16.21	2.21	2.00	4.00	18.00	48.50	115.00	95.5	0	349
PM25	9.40	5.36	7.69	2.00	1.00	2.00	9.00	19.00	32.00	95.5	0	349
SO2	0.23	0.23	0.19	1.79	0.05	0.10	0.17	0.58	5.25	97.8	0	8566
SO4--	0.80	0.52	0.64	1.96	0.12	0.22	0.65	1.79	2.89	96.1	0	351

ES0008R Niembro Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.54	0.56	0.43	1.87	0.09	0.17	0.41	1.31	7.73	93.1	0	340
NH3+NH4+	0.54	0.45	0.41	2.22	0.01	0.13	0.42	1.35	4.54	94.2	3	344
NO2	1.58	1.73	0.99	2.77	0.00	0.16	1.04	4.75	18.14	93.1	0	8152
NO3-	0.49	0.52	0.36	2.06	0.04	0.11	0.35	1.37	6.62	83.5	0	305
PM10	19.76	11.91	16.81	1.77	4.00	7.00	17.00	44.95	68.00	87.6	0	320
PM25	11.03	7.50	8.96	1.91	2.00	3.00	8.00	27.00	47.00	84.9	0	310
SO2	2.20	3.05	1.17	3.07	0.05	0.19	1.10	7.75	39.45	94.1	0	8241
SO4--	1.37	1.22	1.02	2.09	0.13	0.35	0.96	3.89	7.37	91.7	0	335

ES0009R Campisabalos Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.23	0.10	0.22	1.49	0.07	0.12	0.21	0.41	0.91	97.5	0	356
NH3+NH4+	1.16	0.79	0.85	2.45	0.05	0.13	0.99	2.66	3.59	96.1	0	351
NO2	0.90	0.76	0.72	1.86	0.03	0.27	0.71	2.12	13.00	93.9	0	8225
NO3-	0.26	0.16	0.22	1.70	0.05	0.09	0.22	0.53	1.31	84.6	0	309
PM10	11.52	9.34	8.39	2.29	1.00	2.00	9.00	29.00	67.00	89.0	0	325
PM25	7.20	4.65	5.72	2.05	1.00	2.00	6.00	16.00	24.00	80.5	0	294
SO2	0.32	0.52	0.20	2.28	0.05	0.09	0.15	1.00	11.65	95.9	0	8405
SO4--	0.59	0.42	0.47	1.99	0.08	0.15	0.47	1.55	2.45	93.1	0	340

ES0010R Cabo de Creus Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.51	0.32	0.42	1.92	0.09	0.13	0.45	1.10	1.66	94.4	0	345
NH3+NH4+	1.24	0.69	1.01	2.09	0.03	0.21	1.14	2.48	3.62	87.9	0	321
NO2	1.12	1.31	0.62	3.40	0.00	0.05	0.76	3.47	18.05	96.2	0	8423
NO3-	0.49	0.34	0.41	1.82	0.11	0.17	0.38	1.28	1.85	70.9	0	259
PM10	23.84	13.79	21.26	1.58	6.00	11.00	21.00	48.80	133.00	66.5	0	243
PM25	15.81	8.73	13.84	1.68	2.00	6.00	14.00	35.00	58.00	70.6	0	258
SO2	0.29	0.33	0.22	1.99	0.05	0.10	0.19	0.81	8.40	96.5	0	8449
SO4--	1.15	0.74	0.96	1.83	0.17	0.39	0.94	2.54	4.84	76.6	0	280

ES0011R Barcarrola Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.20	0.07	0.19	1.50	0.01	0.11	0.19	0.34	0.57	98.0	3	358
NH3+NH4+	0.42	0.50	0.26	2.81	0.01	0.06	0.24	1.53	4.15	99.1	9	362
NO2	1.16	1.47	0.76	2.56	0.03	0.15	0.80	3.04	26.30	96.3	0	8433
NO3-	0.25	0.14	0.22	1.66	0.05	0.09	0.21	0.53	0.93	87.6	0	320
PM10	16.59	11.78	13.23	1.96	1.00	5.00	13.00	43.00	63.00	91.4	0	334
PM25	8.04	5.92	6.26	2.07	1.00	2.00	7.00	21.00	33.00	93.6	0	342
SO2	0.55	0.76	0.34	2.45	0.05	0.10	0.30	1.76	19.45	97.0	0	8495
SO4--	0.87	0.84	0.65	2.07	0.11	0.22	0.60	2.50	7.84	96.1	0	351

ES0012R Zarra Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.53	0.27	0.46	1.68	0.12	0.17	0.48	1.02	1.65	95.5	0	349
NH3+NH4+	1.68	1.00	1.29	2.40	0.06	0.14	1.58	3.45	4.65	99.4	0	363
NO2	1.42	1.18	1.08	2.07	0.08	0.34	1.06	3.77	11.38	96.5	0	8449
NO3-	0.45	0.26	0.39	1.71	0.04	0.16	0.37	0.97	1.76	86.8	0	317
PM10	16.14	10.71	13.02	1.98	2.00	4.00	15.00	33.00	70.00	94.4	0	345
PM25	7.67	4.29	6.42	1.89	1.00	2.00	7.00	16.00	21.00	96.9	0	354
SO2	0.71	0.83	0.52	2.18	0.05	0.15	0.53	1.80	28.60	97.1	0	8507
SO4--	1.02	0.70	0.81	2.03	0.08	0.24	0.84	2.39	4.19	95.3	0	348

ES0013R Penausende Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.16	0.06	0.15	1.45	0.01	0.09	0.15	0.26	0.47	98.0	1	358
NH3+NH4+	0.39	0.46	0.23	2.71	0.01	0.07	0.19	1.41	2.58	99.6	1	364
NO2	0.97	0.90	0.67	2.53	0.03	0.13	0.72	2.71	8.61	96.0	0	8408
NO3-	0.28	0.24	0.22	1.92	0.04	0.08	0.21	0.79	1.93	86.5	0	316
PM10	12.67	10.05	9.55	2.15	1.00	3.00	10.00	32.80	62.00	93.9	0	343
PM25	7.95	5.66	6.12	2.14	1.00	2.00	6.00	19.00	36.00	90.3	0	330
SO2	0.60	0.74	0.46	1.92	0.08	0.19	0.42	1.53	18.25	96.2	0	8428
SO4--	0.69	0.53	0.54	2.00	0.11	0.18	0.54	1.79	3.13	94.4	0	345

ES0014R Els Torms Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.45	0.32	0.37	1.90	0.01	0.14	0.38	0.97	2.46	94.7	1	346
NH3+NH4+	0.91	0.76	0.73	1.96	0.03	0.24	0.75	1.89	7.66	97.7	0	357
NO2	1.52	1.01	1.28	1.80	0.12	0.52	1.25	3.47	10.71	96.0	0	8407
NO3-	0.55	0.48	0.43	1.92	0.09	0.18	0.39	1.68	3.19	84.6	0	309
PM10	19.58	13.18	16.21	1.87	3.00	5.00	17.00	43.00	113.00	89.5	0	327
PM25	13.26	9.42	10.74	1.94	2.00	3.00	12.00	30.00	93.00	87.6	0	320
SO2	0.71	1.10	0.46	2.35	0.05	0.13	0.42	2.10	19.40	97.3	0	8527
SO4--	1.13	0.74	0.92	1.94	0.13	0.27	0.98	2.69	4.11	91.2	0	333

ES0015R Risco Llano Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.45	0.29	0.36	2.06	0.01	0.13	0.38	1.02	1.94	94.4	4	345
NH3+NH4+	0.46	0.48	0.28	2.97	0.01	0.07	0.26	1.53	2.78	87.4	12	319
NO2	0.87	0.96	0.62	2.25	0.03	0.19	0.58	2.53	16.53	97.4	0	8532
NO3-	0.31	0.21	0.24	2.05	0.03	0.06	0.26	0.76	1.19	82.1	0	300
PM10	14.24	11.43	9.93	2.53	1.00	2.00	11.00	37.00	66.00	85.9	0	314
PM25	7.21	4.86	5.53	2.19	1.00	1.00	6.00	16.75	22.00	77.7	0	284
SO2	0.57	0.79	0.41	2.04	0.05	0.15	0.38	1.49	22.05	97.6	0	8552
SO4--	0.68	0.52	0.52	2.13	0.06	0.15	0.55	1.73	3.24	86.2	0	315

ES0016R O Saviñao Spain

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.44	0.31	0.36	1.98	0.01	0.13	0.36	1.02	2.93	97.5	3	356
NH3+NH4+	0.90	0.76	0.59	2.75	0.01	0.09	0.67	2.49	3.91	94.7	1	346
NO2	1.63	1.20	1.30	2.00	0.03	0.38	1.37	3.65	12.11	91.3	0	8000
NO3-	0.23	0.18	0.18	1.90	0.02	0.07	0.18	0.61	1.63	85.9	0	314
PM10	14.60	10.97	11.48	1.99	2.00	4.00	10.00	38.00	88.00	92.8	0	339
PM25	9.31	7.86	6.70	2.30	1.00	2.00	6.00	25.00	69.00	94.2	0	344
SO2	1.38	2.79	0.57	3.46	0.05	0.11	0.48	5.75	78.50	93.7	0	8208
SO4--	1.05	1.00	0.73	2.31	0.14	0.22	0.71	3.15	5.59	94.2	0	344

FI0009R Uto Finland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.81	1.55	1.34	2.24	-0.05	0.33	1.40	4.73	16.11	98.3	0	8611

FI0017R Virolahti II Finland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.34	2.00	0.50	5.69	-0.40	0.01	0.75	4.74	29.60	97.8	0	8567

FI0022R Oulanka Finland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.07	0.08	0.05	2.56	0.00	0.01	0.05	0.20	0.70	98.8	3	275
NH3+NH4+	0.18	0.26	0.13	2.64	0.00	0.03	0.12	0.69	1.83	99.1	2	276
NO2	0.27	0.29	0.19	2.44	0.00	0.04	0.19	0.78	3.70	67.3	0	5894
SO2	0.33	0.51	0.17	3.85	0.01	0.02	0.16	1.39	4.33	99.4	11	277
SO4--	0.41	0.43	0.32	2.37	0.01	0.06	0.34	1.13	3.46	98.8	1	275

FI0037R Ahtari II Finland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.17	0.15	0.12	2.37	0.01	0.03	0.12	0.48	1.22	97.2	0	353
NH3+NH4+	0.38	0.33	0.28	2.13	0.03	0.09	0.26	1.02	2.35	99.1	0	360
NO2	0.69	0.61	0.48	2.55	-0.01	0.09	0.53	1.83	7.56	82.7	0	7245
SO2	0.40	0.62	0.20	3.07	0.01	0.04	0.18	1.66	4.89	97.2	2	353
SO4--	0.51	0.55	0.35	2.32	0.04	0.09	0.35	1.39	3.93	97.2	0	353

FR0003R La Crouzille France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.46	0.45	0.33	2.13	0.15	0.15	0.21	1.93	2.07	9.6	19	35
SO4--	0.50	0.33	0.41	1.86	0.14	0.15	0.39	1.25	1.27	9.6	0	35

FR0005R La Hague France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.90	0.91	0.56	2.62	0.19	0.21	0.57	2.94	4.37	32.3	52	118
SO4--	0.99	0.78	0.77	2.01	0.16	0.28	0.71	2.93	3.54	32.1	0	117

FR0008R Donon France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.68	0.76	0.45	2.42	0.14	0.17	0.47	1.95	5.21	99.9	157	365
SO4--	0.64	0.42	0.51	2.08	0.04	0.16	0.54	1.52	2.17	98.0	7	358

FR0009R Revin France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.87	0.89	0.56	2.59	0.14	0.18	0.60	2.58	7.10	99.6	135	364
SO4--	0.84	0.65	0.68	1.89	0.04	0.25	0.68	1.89	4.93	98.1	1	358

FR0010R Morvan France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.42	0.47	0.31	2.02	0.17	0.18	0.20	1.46	3.67	96.1	239	351
SO4--	0.60	0.39	0.49	1.96	0.04	0.16	0.51	1.41	2.45	96.3	2	352

FR0012R Iraty France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.51	0.57	0.34	2.21	0.14	0.16	0.23	1.70	3.43	90.9	216	332
SO4--	0.59	0.46	0.42	2.41	0.04	0.09	0.47	1.49	2.49	90.9	12	332

FR0013R Peyrusse Vieille France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.34	0.35	0.25	2.02	0.09	0.11	0.17	0.95	4.36	98.0	216	358
SO4--	0.60	0.42	0.49	1.89	0.04	0.19	0.46	1.47	2.55	96.9	2	354

FR0014R Montandon France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.32	0.51	0.22	2.00	0.12	0.12	0.16	0.95	6.62	94.7	257	346
SO4--	0.47	0.36	0.36	2.13	0.04	0.11	0.36	1.20	2.37	94.4	5	345

FR0015R La Tardière France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.42	0.44	0.30	2.11	0.12	0.14	0.20	1.09	3.47	99.3	207	363
SO4--	0.72	0.59	0.58	1.89	0.12	0.23	0.56	1.70	4.30	98.3	0	359

FR0016R Le Casset France

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.26	0.33	0.20	1.74	0.12	0.14	0.17	0.69	2.86	94.1	311	344
SO4--	0.38	0.27	0.28	2.22	0.04	0.08	0.32	0.90	1.79	93.0	21	340

GB0002R Eskdalemuir United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.41	0.33	0.32	2.06	0.09	0.10	0.30	1.36	1.53	95.9	0	25
SO4--	0.60	0.57	0.40	2.57	0.02	0.08	0.41	1.75	3.93	96.1	0	351

GB0006R Lough Navar United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.20	0.21	0.12	2.67	0.03	0.03	0.09	0.63	0.63	68.6	3	18
SO4--	0.47	0.53	0.29	2.62	0.01	0.08	0.25	1.82	2.53	98.8	1	361

GB0007R Barcomb Mills United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO4--	0.95	0.77	0.73	2.10	0.01	0.27	0.66	2.59	4.91	86.2	0	315

GB0013R Yarner Wood United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.60	0.46	0.44	2.27	0.07	0.09	0.39	1.56	1.58	92.1	0	25
SO4--	0.80	0.85	0.52	2.50	0.04	0.13	0.49	2.56	6.32	88.4	0	323

GB0014R High Muffles United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	1.20	0.51	1.05	1.81	0.20	0.22	1.23	2.10	2.15	99.7	0	26
SO4--	0.70	0.61	0.50	2.21	0.09	0.16	0.45	2.04	3.37	99.4	0	363
NO2	4.40	4.36	2.45	3.31	0.00	0.30	2.80	14.30	18.80	18.5	0	1618

GB0015R Strathvaich Dam United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO2	0.11	0.15	0.06	2.69	0.01	0.01	0.06	0.59	0.63	92.3	0	24

GB0036R Harwell United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	4.80	4.68	3.06	2.76	0.00	0.50	2.90	14.50	29.10	87.1	0	7629

GB0037R Ladybower United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	3.94	4.18	2.57	2.65	0.00	0.40	2.60	12.40	39.80	97.8	0	8568

GB0038R Lullington Heath United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	3.81	3.33	2.78	2.29	0.00	0.60	2.90	10.80	27.20	88.3	0	7738

GB0043R Narberth United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	2.69	2.44	2.03	2.28	0.00	0.20	2.00	7.92	17.90	79.4	0	6954

GB0045R Wicken Fen United Kingdom

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	5.47	4.19	4.11	2.26	0.00	0.90	4.40	13.90	37.40	59.8	0	5236

GR0001R Aliartos Greece

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	34.63	12.95	31.70	1.58	5.00	12.00	35.00	54.00	74.00	25.5	0	2232
SO2	12.77	12.24	9.20	2.22	2.00	2.00	9.00	39.20	96.00	49.3	0	4315

HU0002R K-Puszta Hungary

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.27	0.25	0.20	2.19	0.01	0.06	0.21	0.58	2.25	96.9	1	354
NH3	1.48	0.98	0.95	3.50	0.02	0.02	1.49	3.13	4.30	96.9	19	354
NH4+	1.74	1.90	1.07	2.81	0.01	0.21	1.06	5.86	11.47	96.9	1	354
NO2	1.79	0.98	1.58	1.64	0.38	0.75	1.55	3.43	6.24	62.4	1	228
NO3-	0.76	0.97	0.42	3.03	0.01	0.10	0.38	2.71	6.58	96.9	4	354
SO2	2.43	2.84	1.56	2.57	0.05	0.36	1.51	7.61	24.89	96.9	0	354
SO4--	1.64	1.49	1.22	2.24	0.01	0.34	1.25	4.11	9.95	96.9	1	354

IE0001R Valentia Obs. Ireland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	0.79	0.77	0.53	2.59	0.00	0.10	0.60	2.17	6.20	99.9	14	365
SO2	0.43	0.56	0.25	2.75	0.01	0.07	0.22	1.58	4.39	99.9	8	365
SO4--	0.66	0.62	0.50	2.05	0.04	0.17	0.50	1.88	4.00	99.9	0	365

IS0002R Irafoss Iceland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
SO4--	0.17	0.13	0.13	1.92	0.00	0.05	0.13	0.42	0.95	96.1	0	351

IT0001R Montelibretti Italy

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
PM10	28.18	12.23	25.22	1.67	1.14	10.57	27.36	50.35	67.20	93.7	0	342

IT0004R Ispra Italy

January 2003 - December 2003
PM2.5 fraction

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	1.83	1.61	1.21	2.88	0.02	0.17	1.52	4.92	13.87	67.1	0	245
NO3-	0.91	1.37	0.27	6.36	0.00	0.01	0.31	4.31	6.96	67.1	0	245
SO4--	1.13	0.77	0.85	2.32	0.00	0.17	0.97	2.48	4.21	67.1	0	245
PM25	28.50	22.08	21.06	2.34	0.34	5.06	22.09	79.82	110.33	66.6	0	243

IT0004R Ispra Italy

January 2003 - December 2003
PM10 fraction

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	2.19	1.93	1.46	2.69	0.08	0.20	1.70	6.05	11.04	95.5	0	349
NO3-	1.38	1.95	0.47	5.34	0.01	0.03	0.50	5.70	11.41	95.5	0	349
SO4--	1.28	0.86	0.96	2.32	0.05	0.18	1.16	2.77	5.16	95.5	0	349
PM10	39.83	32.60	29.39	2.23	1.56	7.37	29.70	106.89	191.53	92.2	0	337

LT0015R Preila Lithuania

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.76	0.63	0.57	2.16	0.03	0.17	0.58	1.88	5.13	98.0	0	358
NH3+NH4+	1.49	1.01	1.19	1.99	0.11	0.37	1.21	3.72	6.32	98.3	0	359
NO2	1.33	0.84	1.14	1.71	0.27	0.52	1.07	2.95	5.57	97.2	0	355
SO2	0.92	1.27	0.52	2.79	0.05	0.12	0.44	3.54	8.57	97.2	0	355
SO4--	1.13	0.95	0.88	2.00	0.12	0.31	0.84	3.46	6.15	97.4	0	356

LV0010R Rucava Latvia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.44	0.39	0.32	2.27	0.02	0.08	0.32	1.16	3.01	99.9	0	365
NH3+NH4+	1.21	0.84	0.95	2.07	0.09	0.25	1.00	2.97	4.87	99.4	0	363
NH4+	0.78	0.71	0.52	2.64	0.01	0.08	0.54	2.26	4.44	99.6	19	364
NO2	0.86	0.65	0.67	2.09	0.04	0.20	0.65	2.25	4.19	99.4	7	363
NO3-	0.07	0.07	0.06	2.10	0.01	0.02	0.06	0.19	0.69	99.4	7	363
SO2	0.63	0.62	0.46	2.21	0.02	0.13	0.42	1.75	6.48	99.4	2	363
SO4--	0.65	0.61	0.43	2.56	0.01	0.09	0.46	2.05	3.70	99.9	5	365

LV0016R Zoseni Latvia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.24	0.18	0.19	2.02	0.00	0.05	0.19	0.59	1.00	99.9	0	365
NH3+NH4+	0.81	0.51	0.66	1.98	0.07	0.19	0.70	1.72	3.47	99.9	0	365
NH4+	0.59	0.42	0.44	2.30	0.02	0.10	0.48	1.43	2.56	99.9	12	365
NO2	0.58	0.53	0.42	2.36	0.01	0.08	0.45	1.40	4.50	99.4	20	363
NO3-	0.04	0.04	0.04	1.95	0.01	0.01	0.03	0.11	0.35	99.6	9	364
SO2	0.58	0.59	0.41	2.25	0.04	0.11	0.41	1.54	5.46	99.6	7	364
SO4--	0.45	0.43	0.32	2.31	0.02	0.08	0.33	1.23	3.36	99.9	11	365

NL0009R Kollumerwaard Netherlands

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.11	0.12	0.07	2.96	-0.00	0.01	0.08	0.37	0.84	44.9	0	164
NH4+	1.33	1.16	0.96	2.38	-0.11	0.24	1.07	3.56	10.52	86.3	0	315
NO2	3.96	3.65	2.53	2.93	-0.55	0.33	2.78	12.08	29.29	97.8	0	8566
NO3-	0.78	0.76	0.66	2.21	0.00	0.00	0.62	2.30	6.10	86.3	0	315
SO2	0.57	0.72	0.45	2.82	-0.88	-0.26	0.41	1.93	7.06	94.9	0	8310
SO4--	0.87	0.62	0.70	1.99	0.00	0.26	0.77	2.08	4.61	86.3	0	315

NL0010R Vreedepeel Netherlands

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH3	15.51	12.27	12.14	2.00	0.56	4.29	11.84	38.17	123.95	69.0	0	6045
NH4+	1.81	1.47	1.37	2.25	-0.15	0.32	1.48	4.56	10.49	97.8	0	357
NO2	7.44	4.83	5.96	2.01	0.53	1.80	6.33	16.82	30.39	97.6	0	8549
NO3-	1.03	0.86	0.79	2.23	0.00	0.16	0.78	2.92	4.98	97.8	0	357
SO2	1.15	1.60	0.70	3.30	-1.02	-0.10	0.61	4.42	14.60	95.5	0	8370
SO4--	1.04	0.83	0.82	2.08	-0.03	0.17	0.81	2.46	7.17	97.8	0	357

NO0001R Birkenes Norway

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.04	0.04	0.03	2.67	0.01	0.01	0.03	0.12	0.49	99.7	48	364
Cl-	0.29	0.60	0.07	5.88	0.01	0.01	0.05	1.35	4.96	94.2	119	344
HNO3	0.07	0.10	0.04	3.40	0.01	0.01	0.04	0.26	0.86	99.9	142	365
HNO3+NO3-	0.26	0.40	0.13	3.20	0.01	0.02	0.13	1.02	3.14	98.3	5	359
K+	0.05	0.04	0.04	2.57	0.01	0.01	0.04	0.15	0.26	99.9	31	365
Mg++	0.048	0.060	0.026	3.169	0.005	0.005	0.030	0.157	0.450	99.9	75	365
NH3	0.22	0.14	0.18	1.93	0.02	0.06	0.19	0.52	0.75	99.9	6	365
NH3+NH4+	0.60	0.70	0.38	2.51	0.05	0.10	0.39	1.91	5.07	99.9	0	365
NH4+	0.38	0.65	0.11	6.49	0.01	0.01	0.17	1.74	4.45	99.9	67	365
NO2	0.57	0.62	0.39	2.41	0.01	0.11	0.38	1.69	4.66	97.7	5	357
NO3-	0.19	0.34	0.08	3.48	0.01	0.01	0.08	0.74	2.99	98.3	7	359
Na+	0.37	0.46	0.20	3.43	0.01	0.02	0.24	1.21	3.44	99.9	7	365
SO2	0.15	0.18	0.10	2.41	0.01	0.03	0.08	0.45	1.46	99.9	9	365
SO4--	0.50	0.57	0.27	3.35	0.01	0.03	0.32	1.40	4.13	99.7	1	364
PM10	6.66	5.50	4.85	2.31	0.40	1.10	5.50	16.68	34.06	83.5	2	305
PM10-PM25	2.23	1.89	1.48	2.87	-0.30	0.14	1.82	5.87	11.23	86.2	26	315
PM25	4.40	4.50	2.80	2.84	0.12	0.52	2.96	13.67	30.71	83.5	10	305
SO4-- corr	0.47	0.57	0.23	3.92	-0.01	0.02	0.30	1.34	4.11	99.7	1	364

NO0008R Skreaadalen Norway

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.06	0.07	0.04	2.51	0.01	0.01	0.04	0.16	0.45	60.2	11	220
Cl-	0.35	0.60	0.09	6.00	0.01	0.01	0.07	1.66	4.06	59.7	55	218
HNO3	0.05	0.06	0.03	2.86	0.01	0.01	0.01	0.18	0.50	60.3	106	220
HNO3+NO3-	0.15	0.17	0.10	2.34	0.01	0.02	0.10	0.51	1.46	58.1	0	212
K+	0.04	0.04	0.03	2.04	0.01	0.01	0.03	0.09	0.58	60.2	7	220
Mg++	0.045	0.054	0.025	3.094	0.005	0.005	0.030	0.169	0.350	60.8	46	222
NH3	0.75	0.32	0.68	1.61	0.11	0.28	0.71	1.38	1.74	60.8	0	222
NH3+NH4+	0.94	0.43	0.84	1.59	0.21	0.38	0.85	1.76	2.36	59.9	0	219
NH4+	0.18	0.25	0.05	6.34	0.01	0.01	0.08	0.66	1.68	59.9	67	219
NO2	0.34	0.32	0.25	2.42	0.01	0.04	0.27	0.93	2.24	60.5	8	221
NO3-	0.10	0.13	0.07	2.72	0.01	0.01	0.07	0.34	1.11	58.6	9	214
Na+	0.33	0.37	0.17	3.63	0.01	0.01	0.20	1.04	2.05	60.8	6	222
SO2	0.07	0.08	0.05	2.22	0.01	0.01	0.05	0.28	0.59	60.3	20	220
SO4--	0.33	0.30	0.21	2.73	0.01	0.04	0.21	0.95	1.43	60.8	0	222
SO4-- corr	0.30	0.30	0.17	3.23	0.01	0.02	0.18	0.94	1.28	60.8	0	222

NO0015R Tustervatn Norway

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.04	0.05	0.03	2.64	0.01	0.01	0.03	0.14	0.39	92.3	37	337
Cl-	0.56	0.91	0.13	7.20	0.01	0.01	0.17	2.46	6.11	87.1	84	318
HNO3	0.03	0.04	0.02	2.35	0.00	0.01	0.01	0.12	0.20	92.0	238	336
HNO3+NO3-	0.12	0.20	0.06	2.74	0.01	0.02	0.06	0.49	1.48	87.1	3	318
K+	0.03	0.03	0.02	2.57	0.01	0.01	0.02	0.08	0.16	92.3	90	337
Mg++	0.053	0.069	0.025	3.617	0.005	0.005	0.030	0.210	0.460	92.3	91	337
NH3	1.00	1.04	0.65	2.55	0.08	0.14	0.62	3.44	6.54	89.5	0	327
NH3+NH4+	1.15	1.07	0.80	2.31	0.13	0.21	0.77	3.49	6.71	88.7	0	324
NH4+	0.15	0.29	0.05	5.04	0.01	0.01	0.06	0.71	2.00	91.7	77	335
NO2	0.18	0.11	0.14	2.37	0.01	0.01	0.17	0.39	0.55	92.0	28	336
NO3-	0.09	0.17	0.04	3.37	0.01	0.01	0.04	0.42	1.29	87.3	32	319
Na+	0.39	0.54	0.16	4.54	0.01	0.01	0.18	1.46	3.81	92.3	13	337
SO2	0.09	0.16	0.06	2.07	0.01	0.03	0.05	0.30	1.74	91.2	10	333
SO4--	0.22	0.27	0.14	2.55	0.01	0.03	0.13	0.75	1.56	92.3	0	337
SO4-- corr	0.19	0.27	0.09	3.43	0.00	0.01	0.10	0.74	1.56	92.3	0	337

NO0039R Kaarvatn Norway

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.04	0.07	0.02	2.92	0.01	0.01	0.02	0.10	0.74	99.9	100	365
Cl-	0.27	0.56	0.06	5.90	0.01	0.01	0.04	1.23	4.20	91.7	135	335
HNO3	0.03	0.04	0.02	2.14	0.01	0.01	0.01	0.10	0.33	99.9	259	365
HNO3+NO3-	0.09	0.14	0.06	2.25	0.01	0.02	0.06	0.27	1.75	95.3	3	348
K+	0.03	0.03	0.02	2.67	0.01	0.01	0.02	0.08	0.18	99.7	110	364
Mg++	0.032	0.047	0.016	3.120	0.005	0.005	0.020	0.110	0.350	99.9	146	365
NH3	0.83	1.01	0.52	2.61	0.08	0.12	0.49	2.48	11.98	99.9	0	365
NH3+NH4+	0.95	1.09	0.61	2.54	0.08	0.15	0.60	2.86	12.37	98.6	0	360
NH4+	0.13	0.22	0.05	4.66	0.01	0.01	0.06	0.52	2.50	98.6	75	360
NO2	0.30	0.25	0.23	2.36	0.01	0.04	0.25	0.79	2.05	99.9	16	365
NO3-	0.06	0.12	0.04	2.82	0.01	0.01	0.04	0.20	1.47	95.3	34	348
Na+	0.23	0.34	0.11	3.53	0.01	0.01	0.10	0.81	2.41	99.9	9	365
SO2	0.07	0.06	0.06	1.70	0.01	0.03	0.06	0.13	0.54	99.9	15	365
SO4--	0.22	0.24	0.13	2.80	0.01	0.03	0.14	0.62	1.87	99.4	5	363
SO4-- corr	0.20	0.24	0.11	3.35	-0.00	0.02	0.12	0.61	1.86	99.4	5	363

NO0041R Osen Norway

January 2003 - December 2003

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	2.53	0.01	0.01	0.02	0.10	0.38	94.5	73	345
Cl-	0.08	0.16	0.03	3.75	0.01	0.01	0.01	0.47	0.97	81.6	179	298
HNO3	0.05	0.06	0.03	2.98	0.01	0.01	0.01	0.19	0.36	93.7	176	342
HNO3+NO3-	0.13	0.16	0.08	2.58	0.01	0.02	0.07	0.48	1.22	91.0	0	332
K+	0.03	0.03	0.02	2.34	0.01	0.01	0.02	0.09	0.16	94.5	47	345
Mg++	0.014	0.017	0.009	2.306	0.005	0.005	0.005	0.050	0.080	94.5	195	345
NH3	0.25	0.15	0.20	2.07	0.02	0.06	0.23	0.55	1.04	88.5	11	323
NH3+NH4+	0.46	0.35	0.36	2.09	0.03	0.10	0.36	1.20	2.25	88.5	0	323
NH4+	0.21	0.29	0.08	4.81	0.01	0.01	0.09	0.84	1.71	94.5	49	345
NO2	0.45	0.54	0.31	2.33	0.01	0.08	0.31	1.29	7.49	97.8	5	357
NO3-	0.08	0.12	0.04	3.04	0.01	0.01	0.04	0.31	1.10	91.8	21	335
Na+	0.12	0.12	0.07	3.17	0.01	0.01	0.08	0.37	0.71	94.5	23	345
SO2	0.08	0.09	0.06	2.03	0.01	0.03	0.05	0.24	0.92	93.4	16	341
SO4--	0.29	0.38	0.16	3.03	0.01	0.03	0.17	0.88	2.92	94.0	2	343
SO4-- corr	0.28	0.38	0.15	3.26	-0.02	0.02	0.16	0.87	2.92	94.0	2	343

NO0042G Zeppelin, Spitsbergen Norway

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
Ca++	0.05	0.07	0.03	2.66	0.01	0.01	0.03	0.18	0.50	98.8	37	361
Cl-	0.28	0.50	0.10	4.75	0.01	0.01	0.12	1.07	5.33	94.2	70	344
HNO3	0.02	0.01	0.01	1.55	0.01	0.01	0.01	0.04	0.09	85.7	274	313
HNO3+NO3-	0.04	0.02	0.03	1.57	0.02	0.02	0.03	0.07	0.14	76.4	0	279
K+	0.02	0.02	0.01	2.31	0.01	0.01	0.01	0.05	0.14	98.8	165	361
Mg++	0.041	0.052	0.022	3.101	0.005	0.005	0.020	0.140	0.540	98.8	92	361
NH3	0.23	0.14	0.20	1.67	0.03	0.08	0.21	0.40	2.13	86.2	3	315
NH3+NH4+	0.27	0.14	0.24	1.50	0.06	0.13	0.24	0.44	2.15	86.2	0	315
NH4+	0.04	0.05	0.02	3.44	0.01	0.01	0.02	0.15	0.42	86.2	114	315
NO3-	0.02	0.02	0.01	2.26	0.01	0.01	0.02	0.05	0.12	76.9	91	281
Na+	0.23	0.32	0.13	3.30	0.01	0.01	0.14	0.67	3.65	98.8	16	361
SO2	0.23	0.32	0.13	2.54	0.03	0.05	0.09	0.85	1.93	98.3	0	359
SO4--	0.17	0.16	0.11	3.03	0.01	0.01	0.13	0.50	1.02	98.3	11	359
SO4-- corr	0.16	0.15	0.09	3.74	-0.03	0.01	0.11	0.48	0.95	98.3	11	359

NO0055R Karasjok Norway

January 2003 - December 2003

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	2.54	0.01	0.01	0.02	0.09	0.29	98.9	67	361
Cl-	0.32	0.70	0.08	5.85	0.01	0.01	0.10	1.38	7.20	94.8	112	346
HNO3	0.03	0.04	0.01	2.41	0.01	0.01	0.01	0.13	0.23	98.4	257	359
HNO3+NO3-	0.08	0.11	0.05	2.44	0.01	0.02	0.04	0.33	0.76	93.4	4	341
K+	0.02	0.02	0.01	2.52	0.01	0.01	0.02	0.06	0.20	98.4	113	359
Mg++	0.035	0.058	0.018	3.076	0.005	0.005	0.020	0.119	0.610	98.9	115	361
NH3+NH4+	0.14	0.19	0.06	4.87	0.01	0.01	0.09	0.47	1.57	98.4	76	359
NH4+	0.14	0.19	0.06	4.87	0.01	0.01	0.09	0.47	1.57	98.4	76	359
NO2	0.21	0.15	0.16	2.42	0.01	0.01	0.18	0.50	0.95	99.9	28	365
NO3-	0.05	0.08	0.03	2.96	0.01	0.01	0.03	0.22	0.54	94.0	43	343
Na+	0.27	0.42	0.13	3.76	0.01	0.01	0.14	0.93	4.21	98.9	19	361
SO2	0.20	0.40	0.09	2.93	0.01	0.03	0.06	1.05	3.12	97.3	10	355
SO4--	0.26	0.28	0.16	2.93	0.01	0.02	0.19	0.77	2.43	98.1	2	358
SO4-- corr	0.24	0.28	0.13	3.44	-0.04	0.01	0.16	0.76	2.43	98.1	2	358

NO0099R Lista Norway

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
PM10-PM25	11.39	7.47	9.59	1.78	3.38	3.74	8.75	32.40	32.83	87.4	0	45
PM25	7.33	3.35	6.65	1.60	1.66	2.33	6.92	15.59	17.34	87.4	0	45

PL0002R Jarczew Poland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.92	0.65	0.73	1.98	0.09	0.23	0.75	2.12	4.82	99.1	0	362
NH3+NH4+	3.17	1.89	2.67	1.82	0.34	1.01	2.76	6.59	13.51	95.8	0	350
NH4+	1.85	1.31	1.47	2.01	0.10	0.45	1.53	4.64	9.53	98.3	0	359
NO2	3.10	1.36	2.82	1.55	0.70	1.40	2.90	5.90	8.40	97.2	0	355
NO3-	0.77	0.60	0.58	2.17	0.05	0.16	0.61	1.85	4.07	99.1	0	362
SO2	2.36	2.12	1.45	3.09	0.10	0.10	1.70	6.80	10.90	90.1	19	329
SO4--	1.66	0.98	1.36	2.00	0.10	0.37	1.50	3.39	5.82	99.1	7	362

PL0003R Sniezka Poland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.29	0.16	0.25	1.78	0.02	0.10	0.26	0.60	0.87	99.9	0	365
NH3+NH4+	0.74	0.40	0.62	1.96	0.03	0.17	0.72	1.48	2.17	99.9	1	365
NH4+	0.58	0.32	0.47	2.15	0.03	0.10	0.56	1.16	1.61	99.9	9	365
NO2	0.95	0.57	0.80	1.83	0.20	0.30	0.80	1.97	3.70	99.9	0	365
NO3-	0.24	0.13	0.20	1.82	0.02	0.07	0.21	0.49	0.70	99.9	0	365
SO2	0.98	0.54	0.84	1.78	0.20	0.30	0.90	1.90	3.40	99.9	0	365
SO4--	0.72	0.38	0.60	2.01	0.10	0.10	0.69	1.43	1.83	99.9	28	365

PL0004R Leba Poland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.66	0.62	0.47	2.29	0.05	0.12	0.46	2.06	3.98	99.7	0	364
NH3+NH4+	1.39	0.88	1.11	2.12	0.03	0.29	1.21	2.98	4.94	68.7	2	251
NH4+	1.13	1.00	0.78	2.52	0.03	0.16	0.84	3.45	5.43	99.7	5	364
NO2	1.67	1.23	1.36	1.88	0.20	0.50	1.30	4.10	9.90	97.5	0	356
NO3-	0.55	0.60	0.36	2.58	0.02	0.07	0.36	1.97	3.95	99.7	0	364
SO2	1.78	1.88	1.14	2.69	0.10	0.20	1.20	5.59	14.30	91.2	13	333
SO4--	1.52	0.90	1.27	1.87	0.10	0.41	1.36	3.39	6.13	82.7	2	302

PL0005R Diabla Gora Poland

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.73	0.73	0.51	2.32	0.04	0.15	0.48	2.33	5.98	99.7	2	364
NH3+NH4+	0.73	0.73	0.51	2.32	0.04	0.15	0.48	2.33	5.98	99.7	2	364
NO2	0.76	0.61	0.61	1.92	0.01	0.26	0.59	1.83	5.43	99.7	1	364
SO2	0.84	0.89	0.56	2.47	0.01	0.15	0.56	2.55	7.09	99.1	1	362
SO4--	0.81	0.79	0.56	2.42	0.04	0.15	0.56	2.44	5.16	99.9	1	365

RU0001R Janiskoski Russian Federation

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	0.28	0.23	0.19	2.99	0.01	0.01	0.25	0.73	1.46	83.5	0	305
NO3-	0.07	0.09	0.04	2.63	0.01	0.01	0.04	0.23	0.84	83.5	0	305
SO2	0.96	1.95	0.34	3.87	0.06	0.06	0.24	4.37	15.50	83.8	0	306
SO4--	0.61	0.69	0.37	2.92	0.03	0.05	0.41	1.90	5.75	83.5	0	305

RU0016R Shepeljovo Russian Federation

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	0.41	0.27	0.32	2.26	0.01	0.09	0.36	0.89	1.63	87.7	0	320
NO3-	0.17	0.14	0.13	2.19	0.01	0.04	0.14	0.43	1.12	87.7	0	320
SO2	0.79	0.93	0.48	2.74	0.06	0.08	0.48	2.81	8.85	87.7	0	320
SO4--	0.43	0.42	0.31	2.37	0.03	0.06	0.31	1.21	3.52	87.4	0	319

RU0018R Danki Russian Federation

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NH4+	0.52	0.37	0.39	2.33	0.01	0.08	0.45	1.17	3.05	75.9	0	277
NO3-	0.34	0.35	0.23	2.63	0.01	0.04	0.23	0.96	3.49	75.9	0	277
SO2	0.57	0.70	0.33	2.79	0.06	0.06	0.27	2.19	4.77	75.6	0	276
SO4--	0.76	0.68	0.56	2.25	0.06	0.13	0.59	1.86	5.37	75.9	0	277

SE0005R Bredkalen Sweden

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.12	0.33	0.06	2.85	0.00	0.00	0.05	0.35	4.78	99.9	31	365
NH3+NH4+	0.25	0.62	0.10	3.92	0.01	0.01	0.13	0.83	10.32	99.9	95	365
NO2	0.14	0.22	0.08	2.40	0.05	0.05	0.05	0.45	2.32	96.6	257	353
SO2	0.07	0.16	0.02	3.61	0.01	0.01	0.01	0.39	1.24	99.9	232	365
SO4--	0.21	0.27	0.13	2.86	0.00	0.00	0.13	0.75	2.35	99.9	20	365
SPM	0.42	0.32	0.39	1.30	0.38	0.38	0.38	0.38	4.32	97.7	350	357

SE0008R Hoburg Sweden

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
NO2	1.09	0.90	0.83	2.13	0.05	0.28	0.80	2.84	8.04	99.7	5	364
SO2	0.72	0.88	0.41	3.09	0.01	0.07	0.44	2.53	6.07	99.9	10	365
SO4--	0.81	0.82	0.54	2.54	0.00	0.11	0.55	2.56	5.14	99.4	2	363
SPM	2.05	3.51	0.82	3.35	0.38	0.38	0.38	8.99	23.08	99.9	248	365

SE0011R Vavihill Sweden

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.72	0.86	0.44	2.84	0.00	0.07	0.47	2.14	8.90	96.4	4	352
NH3+NH4+	1.29	1.29	0.81	3.00	0.01	0.10	0.92	3.64	10.56	96.4	5	352
NO2	1.54	1.36	1.18	2.04	0.05	0.44	1.11	4.27	10.69	95.8	1	350
PM10	15.38	12.98	11.75	2.46	-11.20	0.40	12.30	41.60	97.40	62.4	0	5466
PM25	10.48	12.02	7.62	2.83	-13.70	-2.10	7.20	36.00	84.30	57.7	0	5051
SO2	0.52	0.67	0.26	3.76	0.01	0.01	0.27	1.95	4.97	96.4	27	352
SO4--	0.73	0.74	0.53	2.54	0.00	0.00	0.55	2.29	4.86	96.4	18	352
SPM	2.44	3.88	1.02	3.52	0.38	0.38	0.38	11.16	26.61	95.5	203	349

SE0012R Aspvreten Sweden

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
PM10	6.70	7.31	5.25	2.77	-12.40	-1.80	5.10	20.80	82.40	84.6	0	7407
PM25	4.75	5.66	3.78	2.77	-11.40	-1.60	3.50	15.20	68.00	86.1	0	7544

SE0014R Råö Sweden

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.75	0.84	0.48	2.68	0.00	0.08	0.50	2.16	6.33	99.9	2	365
NH3+NH4+	1.14	1.39	0.69	2.92	0.01	0.14	0.77	3.26	14.52	99.9	6	365
NO2	1.72	1.34	1.37	1.94	0.32	0.47	1.27	4.38	9.87	99.9	0	365
SO2	0.53	0.57	0.35	2.82	0.01	0.07	0.38	1.39	6.56	99.9	11	365
SO4--	0.87	0.79	0.61	2.53	0.00	0.08	0.67	2.38	4.89	99.9	3	365
SPM	1.79	3.01	0.77	3.17	0.38	0.38	0.38	8.42	24.26	99.4	256	363

SE0035R Vindeln Sweden

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
PM10	3.63	5.14	3.51	2.77	-13.00	-2.90	2.80	13.30	36.60	48.6	0	4259
PM25	1.65	3.93	2.36	2.88	-13.10	-3.80	1.10	8.90	27.00	51.6	0	4522

SI0008R Iskrba Slovenia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3+NO3-	0.32	0.34	0.22	2.41	0.02	0.05	0.20	0.96	2.43	99.6	1	364
NH3+NH4+	1.05	0.67	0.82	2.13	0.07	0.21	0.92	2.22	4.46	99.6	0	364
PM10	21.30	10.73	18.41	1.79	1.56	6.76	19.47	41.96	49.98	46.6	0	170
SO2	0.89	1.17	0.44	3.63	0.01	0.04	0.48	3.31	8.28	99.6	0	364
SO4--	0.84	0.68	0.60	2.49	0.01	0.13	0.68	2.10	4.21	99.6	1	364

SK0002R Chopok Slovakia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.10	0.07	0.08	1.84	0.02	0.03	0.08	0.22	0.72	98.0	0	358
NO2	0.73	0.45	0.59	2.06	0.00	0.15	0.70	1.50	2.70	97.7	54	357
NO3-	0.11	0.10	0.07	2.29	0.04	0.04	0.07	0.31	0.64	96.6	177	353
SO2	0.61	0.55	0.48	1.90	0.10	0.20	0.40	1.81	3.60	97.7	0	357
SO4--	0.39	0.45	0.25	2.56	0.01	0.06	0.26	1.38	2.80	98.3	15	359
SPM	9.98	6.81	6.32	3.29	0.50	0.50	9.18	21.88	29.74	79.5	7	49

SK0004R Stara Lesna Slovakia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.07	0.04	0.06	1.63	0.02	0.03	0.06	0.13	0.26	97.2	0	355
NO2	1.41	0.64	1.29	1.53	0.20	0.63	1.30	2.67	5.20	99.9	0	365
NO3-	0.26	0.25	0.17	2.87	0.02	0.02	0.20	0.70	1.68	98.3	53	359
PM10	15.73	8.52	14.48	1.56	5.47	6.40	14.77	36.44	52.06	75.1	0	50
SO2	0.88	0.87	0.60	2.36	0.10	0.20	0.60	2.80	6.00	98.3	0	359
SO4--	0.92	0.69	0.69	2.30	0.04	0.14	0.77	2.21	4.06	98.5	0	360

SK0005R Liesek Slovakia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.08	0.05	0.07	1.75	0.02	0.03	0.07	0.17	0.28	98.3	0	359
NO2	1.92	0.89	1.76	1.53	0.20	1.10	1.70	4.00	5.60	99.1	2	362
NO3-	0.48	0.30	0.40	1.87	0.02	0.15	0.41	1.08	1.96	98.3	3	359
PM10	23.26	10.86	22.31	1.50	9.55	10.42	22.24	55.91	59.44	79.5	0	51
SO2	1.71	1.73	1.18	2.31	0.20	0.30	1.10	5.60	9.80	98.8	0	361
SO4--	1.17	0.72	1.00	1.77	0.20	0.37	1.03	2.60	4.73	99.4	0	363

SK0006R Starina Slovakia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.16	0.15	0.12	2.14	0.02	0.04	0.11	0.47	1.01	94.4	0	345
NO2	1.20	0.66	1.03	1.84	0.15	0.30	1.10	2.50	4.20	98.3	13	359
NO3-	0.27	0.18	0.20	2.49	0.02	0.02	0.25	0.62	1.13	97.2	35	355
PM10	21.64	10.58	18.79	1.52	10.48	10.62	17.07	48.80	57.79	82.7	0	41
SO2	1.39	1.44	0.92	2.46	0.10	0.20	0.80	4.70	8.70	93.9	0	343
SO4--	1.08	0.71	0.85	2.16	0.02	0.26	0.92	2.58	4.38	96.9	3	354

SK0007R Topoliniky Slovakia

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.10	0.06	0.09	1.78	0.02	0.03	0.09	0.25	0.38	92.2	0	337
NO2	3.03	1.52	2.67	1.70	0.30	1.10	2.80	5.60	9.30	98.8	0	361
NO3-	1.05	0.66	0.88	1.88	0.02	0.31	0.85	2.46	3.71	95.5	1	349
SO2	2.44	3.78	1.38	2.67	0.20	0.40	1.20	10.00	26.60	92.8	0	339
SO4--	1.26	1.03	0.98	2.01	0.17	0.32	0.96	3.31	5.93	95.5	0	349
SPM	32.00	19.51	26.66	1.82	6.24	9.34	26.96	77.68	96.23	84.1	0	52

TR0001R Cubuk II Turkey

January 2003 - December 2003

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl
HNO3	0.07	0.06	0.05	2.47	0.01	0.01	0.05	0.22	0.33	75.1	55	274
HNO3+NO3-	0.18	0.12	0.15	1.78	0.03	0.06	0.14	0.40	0.96	76.4	0	279
NH3	0.28	0.23	0.19	2.60	0.01	0.04	0.21	0.76	1.13	76.2	52	278
NH3+NH4+	0.69	0.26	0.63	1.57	0.09	0.27	0.69	1.17	1.57	76.4	0	279
NH4+	0.40	0.23	0.31	2.23	0.01	0.06	0.36	0.80	1.10	75.6	12	276
NO2	0.72	0.69	0.52	2.17	0.10	0.17	0.44	2.36	4.19	76.2	0	278
NO3-	0.10	0.10	0.07	2.65	0.00	0.01	0.07	0.26	0.78	76.2	48	278
SO2	1.29	2.47	0.53	3.84	0.01	0.06	0.57	4.78	23.34	76.4	6	279
SO4--	0.64	0.45	0.46	2.63	0.00	0.07	0.56	1.60	2.52	76.2	3	278

Annex 4

Overview of sampling and analytical methods 2003

Country: **Austria**		Main components and ozone - EMEP	Year: 2003	
	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 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
PM_1	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)	All	PM_{10}	Daily (irregular)	GF-AAS
Heavy metals (Cd)	AT02, AT05	PM_{10}	Daily (irregular)	GF-AAS
Heavy metals (As, Ni)	AT02	PM_{10}	Daily (irregular)	GF-AAS
Heavy metals (Pb, Cd, As, Ni)	AT02	$PM_{2.5}$	Daily (irregular)	GF-AAS
Heavy metals (Pb, Cd, As, Ni)	AT02	PM_1	Daily (irregular)	GF-AAS

Country: **Belgium**		Main components and ozone - EMEP	Year: 2003	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount		Instrumental: Rain gauge	Half hourly	Pulses counter
Precipitation amount, official gauge				
Sulphate				
Nitrate				
Ammonium				
Magnesium				
Sodium				
Chloride				
Calcium				
Potassium				
Conductivity				
pH				
Acidity				
Air				
Sulphur dioxide		Instrumental: UV-fluorescence	Half hourly	UV-fluorescence
Sulphur dioxide				
Nitrogen dioxide		Instrumental: Chemiluminescence	Half hourly	Chemiluminescence
Nitric acid				
Ammonia				
Ozone		Instrumental: UV monitor	Half hourly	UV absorption
Sulphate				
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}		Instrumental: Beta absorption	Two-hourly	Beta absorption
$PM_{2.5}$				
Suspended particulate matter				
Sum of nitric acid and nitrate				
Sum of ammonia and ammonium				
Acidity				
Heavy metals (Pb, Cd)				
Heavy metals (As, Ni)				

Country: **Croatia**		Main components and ozone - EMEP	Year: 2003	
	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: 2003	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
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, 20 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.),	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium	All	Bulk	Daily	Atomic absorption method
Calcium				
Magnesium	All	Bulk	Daily	Atomic absorption method
Potassium				
Chloride				
PM_{10}	All	Filter 47 mm, 55 m^3/day	Every 2nd day	Gravimetric
$PM_{2.5}$	All	Filter 47 mm, 55 m^3/day	Every 2nd day	Gravimetric
Suspended particulate matter				
Sum of nitric acid and nitrate	All	KOH-impregnated Whatman 40 filter, 20 m^3/day + Whatman 40 filter, 20 m^3/day	Daily	Ion Chromatography
Sum of ammonia and ammonium	All	Citric acid impregnated Whatman 40 filter, 20 m^3/day + Whatman filter, 20 m^3/day	Daily	Spectrophotometric, Indophenol method, SFA

Country: **Denmark**		Main components and ozone - EMEP	Year: 2003	
	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: 2003	
	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	Instrumental: UV fluorescence	Daily	UV fluorescence
Sulphur dioxide	EE11	Instrumental: UV fluorescence	Daily	UV fluorescence
Nitrogen dioxide	EE09	Instrumental: Chemiluminescence	Daily	Chemiluminescence
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: 2003	
	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: 2003	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only	Daily	
Precipitation amount, official gauge	All	Bulk	Daily	
Sulphate	All	Wet-only	Daily	Ion chromatography
Nitrate	All	Wet-only	Daily	Ion chromatography
Ammonium	All	Wet-only	Daily	Spectrophotometric, Flow injection analysis: Jan. to Feb. Ion chromatography: Mar. to Dec.
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: 2003	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Bulk (daily) at DE02/DE04, wet-only (weekly) at all	Daily / weekly	By volume
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	DE02, DE04, DE28, DE30, DE41	KOH-impregnated Whatman 40 filter, 25 m^3/day (Filterpack)	Daily	Ion chromatography
Nitrogen dioxide	All	NaJ-impregnated glass sinters, 0.7 m^3/day	Daily	Flow injection analysis
Nitric acid				
Ammonia				
Ozone	All	UV-monitor	Halfhourly	UV-absorption
Sulphate	DE02, DE04, DE28, DE30, DE41	Aerosol filter as for sulphate (Filterpack	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	All	Digitel High Volume Sampler DHA 80, round aerosol filters ø15 cm, Machery Nagel MN 85/90	Daily	Gravimetric by weight
$PM_{2.5}$	DE02, DE04, DE05	Digitel High Volume Sampler DHA 80, round aerosol filters ø15 cm, Machery Nagel MN 85/90	Daily	Gravimetric by weight
Suspended particulate matter				
Sum of nitric acid and nitrate	DE02, DE04, DE28, DE30, DE41	Aerosol filter as for sulphate + KOH impregnated filter as for SO_2, 25 m^3/day (Filterpack)	Daily	Ion chromatography
Sum of ammonia and ammonium	DE02, DE04, DE28, DE30, DE41	Aerosol filter as for sulphate + oxalic acid impregnated filter, 25 m^3/day (Filterpack)	Daily	Flow injection analysis
Acidity				

Country: **Greece**		Main components and ozone - EMEP	Year: 2003	
	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: 2003	
	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, 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: 2003	
	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: 2003	
	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: 2003	
	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: 2003	
	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 H3PO3, 17 m^3/day	Daily	Ion chromatography
Ozone	IT01	UV-monitor	Hourly	UV-absorption
Sulphate	IT01	Nylasorb filter, 17 m^3/day	Daily	Ion chromatography
Nitrate	IT01	Nylasorb filter, 17 m^3/day	Daily	Ion chromatography
Ammonium	IT01	Phosphorous acid impregnated filter, 17 m^3/day	Daily	Ion chromatography
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	IT01	Beta gauge monitor 24 m^3/day	Daily	Beta gauge monitor
$PM_{2.5}$				
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: 2003	
	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: 2003	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	All	Wet-only and bulk	Daily	Gravimetric
Precipitation amount, official gauge	All	Meteorological station	Daily	Gauge, Tretjakov type
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: 2003	
	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: 2003	
	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}	All[4]	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
[4] measurements of PM_{10} at NL10 since 02-04-2003

Country: **Norway**		Main components and ozone - EMEP	Year: 2003	
	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. IMWM)**	Main components and ozone - EMEP		Year: 2003	
	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: 2003	
	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: 2003	
	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: 2003	
	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: 2003	
	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 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: 2003	
	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 40 filter, 6-10 m^3/day	Daily	Ion chromatography
Nitrogen dioxide	All	Absorbing solution NaOH and guajacol, 0.5-0.6 m^3/day	Daily	Spectrophotometric, Modified Salzman method
Nitric acid	All	KOH-impregnated Whatman 40 filter, 6-10 m^3/day	Daily	Ion chromatography
Ammonia				
Ozone	SK02, SK04, SK06, SK07	UV-monitor	Hourly	UV-absorption
Sulphate	All	Whatman 40 filter, 6-10 m^3/day	Daily	Capillary electrophoresis
Nitrate	All	Whatman 40 filter, 6-10 m^3/day	Daily	Capillary electrophoresis
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	SK04, SK05, SK06	Partisol R&P, Sartorius nitrocellulose filter, 24 m^3/day	Weekly	Gravimetric method
$PM_{2.5}$				
Suspended particulate matter	SK02, SK07	Sartorius nitrocellulose filter, 8-10 m^3/day	Weekly	Gravimetric method
Sum of nitric acid and nitrate	All	KOH-impregnated Whatman 40 filter / Whatman 40 filter, 6-10 m^3/day	Daily	Ion chromatography / Capillary electrophoresis
Sum of ammonia and ammonium				
Acidity				

Country: **Slovenia**		Main components and ozone - EMEP	Year: 2003	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	SI08	Wet-only	Daily	By weight
Precipitation amount, official gauge	SI08	Bulk	Daily	
Sulphate	SI08	Wet-only	Daily	Ion chromatography
Nitrate	SI08	Wet-only	Daily	Ion chromatography
Ammonium	SI08	Wet-only	Daily	Ion chromatography
Magnesium	SI08	Wet-only	Daily	Ion chromatography
Sodium	SI08	Wet-only	Daily	Ion chromatography
Chloride	SI08	Wet-only	Daily	Ion chromatography
Calcium	SI08	Wet-only	Daily	Ion chromatography
Potassium	SI08	Wet-only	Daily	Ion chromatography
Conductivity	SI08	Wet-only	Daily	Conductivity meter
pH	SI08	Wet-only	Daily	pH meter
Acidity				
Air				
Sulphur dioxide	SI08	KOH-impregnated Whatman 40 filter, 17-23 m^3/day	Daily	Ion chromatography
Nitrogen dioxide		NaI-impregnated glass sinters, ~0.7 m^3/day	Daily	Spectrophotometric, Griess method
Nitric acid				
Ammonia				
Ozone	SI08	UV-monitor	Hourly	UV-absorption
Sulphate	SI08	Teflon filter, Gelman Zefluor 2 μm, 17-23 m^3/day	Daily	Ion chromatography
Nitrate				
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	SI08	Low volume sampler, 2.3 m^3/h, Quartz filter, Schleicher and Schuell 47 mm	Daily	Gravimetric method
$PM_{2.5}$				
Heavy metals (As, Cd, Cr, Cu, Ni, Pb)	SI08	Low volume sampler, 2.3 m^3/h, Quartz filter, Schleicher and Schuell 47 mm	Weekly	ICP-MS
Suspended particulate matter				
Sum of nitric acid and nitrate	SI08	Teflon filter, Gelman Zefluor 2 μm + KOH impregnated Whatman 40 filter, 17-23 m^3/day	Daily	Ion chromatography
Sum of ammonia and ammonium	SI08	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: 2003	
	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 absorption 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 absorption 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, 720 m^3/day	Daily	Ion chromatography
Nitrate	All	Whatman GF/A filter, 720 m^3/day (from 02/2003)	Daily	Ion chromatography
Ammonium				
Sodium				
Calcium				
Magnesium				
Potassium				
Chloride				
PM_{10}	All		Daily	Gravimetric method
$PM_{2.5}$	All		Daily	Gravimetric method
Suspended particulate matter	All	Till 31/12/2002	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				
Heavy metals (Cd, Cu, Pb)	ES08, ES09	PM_{10}	24 hour, once a week	GF-AAS
VOCs	ES09	Canister	Twice a week	Gas chromatography with FID
Carbonyls	ES09	Cartridges of silica-DNPH	Twice a week	HPLC with detector UC

Country: **Sweden**		Main components and ozone - EMEP	Year: 2003	
	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: 2003	
	Station	**Sampling**	**Sampling frequency**	**Analysis method**
Precipitation				
Precipitation amount	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	
Precipitation amount, official gauge				
Sulphate	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Nitrate	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Ammonium	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Magnesium	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Sodium	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Chloride	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Calcium	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Potassium	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Ion chromatography
Conductivity	CH02, CH04, CH05	Wet-only	Daily at CH02, CH05; weekly at CH04	Conductivity meter
pH	CH02, CH04, CH05	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, CH05	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	High Volume Samplers, Ederol 227/1/60, 720 m^3/day	Daily (CH01 2-day-samples)	Gravimetry
$PM_{2.5}$	CH02, CH04	High Volume Samplers, Ederol 227/1/60, 720 m^3/day	Daily	Gravimetry
PM_1	CH04	High Volume Samplers, Ederol 227/1/60, 720 m^3/day	Daily	Gravimetry
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: 2003	
	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: 2003	
	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

Country: **Yugoslavia**		Main components and ozone - EMEP	Year: 2003	
	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				

Annex 5

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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.
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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).