

QUALITY CONTROL OF THE NORWEGIAN UV MONITORING NETWORK.

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A Norwegian UV-monitoring network of GUV multiband radiometers has been operating at locations between 59°N to 79°N since 1995-96. The purpose of the network is to obtain data of high scientific quality, to be used in further assessments related to health- and environmental issues. Maintenance of measurement quality is given priority. Spectral response functions, crucial for calibrations, have been obtained for each instrument. Calibrations are traceable to the Nordic intercomparison of UV radiometers held in Sweden in June 2000. Instruments are inspected daily or weekly. Once a year the instruments are compared to travelling standards operating side by side to the local network radiometers. This enables determination of the longterm drift in instrument responses. For the six years period of operation, the steadiest instrument performed stable within +/- 3%, whereas the least steady had a response drop by 23%. Comparisons with a true cosine performing spectroradiometer demonstrate close agreement (+/- 2%) for solar zenith angles less than 80°. Good cosine performance, high spectral sensitivity and weatherproof design demonstrate that the GUV radiometers are particularly suitable for UV monitoring at high latitudes. Complete records of corrected daily CIE-effective doses and online measurements are presented on <http://uvnett.nrpa.no/>. Gaps in measurement series have been corrected for with a clear sky radiative transfer model and hourly UV sky transmittances estimated from pyranometer data. Measurement data and information about the monitoring network may be found by visiting websites at respectively NRPA, NILU and The University of Oslo; <http://www.nrpa.no>, <http://www.nilu.no/uv>, <http://www.fys.uio.no/plasma/ozone/>. At this stage the quality of the network has reached a satisfactory level and it is possible to move on using UV data in further assessments. Trend analyses and UV forecasting are topics for future work. The network is supported by the ministries of Health and Environment and is administered by The Norwegian Radiation Protection Authority and The Norwegian Pollution Control Authority, the latter through The Norwegian Institute for Air Research.