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Monitoring the stratosphere in GEOmon and NDACC.

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It is indispensable to monitor the atmospheric composition and its variability and trends, in order to identify and understand its long-term changes and evaluate the possible impacts on our environmental conditions. This monitoring of the Earth atmosphere on a global scale is the major objective of the European project GEOmon (http://www.geomon.eu). GEOmon includes a study of Stratospheric Ozone and Climate, including 64 ground-based instruments at 32 stations world-wide that make regular observations of stratospheric ozone, nitrogen dioxide, bromine oxide, halogenated reservoir species, water vapour, temperature, aerosol and polar stratospheric clouds. The resulting preliminary data are submitted rapidly to the GEOmon data center where they are publicly accessible. Most of the instruments are contributing to NDACC and have historical time series in the NDACC archive. Hence quality-controlled data are mostly archived at the NDACC Data Handling Facility (ftp://ftp.cpc.ncep.noaa.gov/ndacc/)

Some time series are also being revised to improve the homogeneity of the network, and to enable long-term trend studies and synergistic use with satellite data. The latter aspect requires a good characterisation of the information content of the ground-based and satellite data, work that is also ongoing in this GEOmon activity.

This presentation will give an overview of the data set and highlight some recent results concerning long-term time series and trends, and their implications for stratospheric ozone recovery and the connections with climate parameters like the Brewer Dobson circulation.