

The E-PROFILE network for the operational measurement of wind and aerosol profiles in Europe

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EUMETNET is a grouping of 31 European National Meteorological Services that provides a framework to organize co-operative programmes between its Members in the various fields of basic meteorological activities. These activities include observing systems, data processing, basic forecasting products, research and development and training.

The E-PROFILE programme is part of the EUMETNET Composite Observing System, EUCOS, and coordinates the measurements of vertical profiles of wind from radar wind profilers and weather radars from a network of locations across Europe and provides the data to the end users. The main goal is to improve the overall usability of wind profiler data for operational meteorology and to provide support and expertise to both profiler operators and end users. Furthermore, E-PROFILE is developing a framework to produce and exchange profiles of attenuated backscatter profiles from automatic lidars and ceilometers across Europe, to obtain information about clouds and the vertical distribution of aerosol in an operational setting.

The RWP branch of the E-PROFILE network is an operational part of EUCOS since 2005. It currently consists of 29 technically diverse radar profiler systems using VHF, UHF and L-band in Europe. Data from these profilers are distributed over the GTS of WMO and assimilated in various global and regional numerical weather prediction (NWP) models. Some recent studies have demonstrated a significant positive impact of the RWP data on NWP as well as a favorable cost/benefit ratio, in comparison to other systems.

The presentation will focus on the capabilities and the benefits of the centralized monitoring of E-PROFILE, but also touch upon the various challenges encountered during a long-term, 24/7 operational use of RWP. An overview of the current network performance will be given and future plans will be outlined.