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## Profiling the Atmospheric Boundary Layer at European Scale - COST Action

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A three-dimensional spatial analysis of atmosphere, including its boundary layer, has become possible after upper air vertical atmospheric observation started. Mountain observatories, as e.g. at the Sonnblick Observatory in Austrian Alpine, which operates since 1866, belong to a group of such observation. During 18-th and 19-th century upper air observations have been made by balloons equipped with meteorological instruments. The first such observation was done at Glasgow in 1749. The first radiosounding vertical profile observation was done in 1927. At the end of 1940-s an operative network of radiosounding stations has been started to use for construction of upper air synoptic maps and three-dimensional spatial atmospheric analyses. The first meteorological satellite was launched in 1960. Weather radar, airplane observation and wind and air temperature profilers take place since then. A description of these developments in Europe are the main subject of this study. Criteria for vertical profile observation, data processing and analysis have been continuously done by the World Meteorological Organization and their development by states and European Union research projects including COST actions. Details are also represented.

KEY WORDS: vertical profiling of atmosphere, Europe, COST actions