



Characterization of long-range transport of aerosols over Austria

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The long-range transport of aerosols over Austria is characterized using measurements from EARLINET lidar stations and AERONET stations closest to Austria, and aerosol transport models.

The analysis is based on selected events of long-range transport of aerosols recorded over Central and South-Eastern Europe: dust, biomass burning, continental aerosols and a special case of volcanic ash, using measurements from EARLINET and AERONET stations around Austria: Garmisch-Partenkirchen, Munich, Leipzig (all stations located in Germany), and Bucharest (Romania).

Aerosol layers have been determined using a wavelet analysis applied to the lidar measurements. The optical properties of these aerosols have been also determined from lidar and sunphotometer measurements.

The analysis of the trajectories has been performed with the FLEXTRA model, while the estimation of the potential areas of aerosols' sources has been performed using FLEXPART transport model. Based on the spatial and temporal distributions of the trajectories, the main groups of trajectories have been identified using a cluster analysis.

The results shows that the long-range transported aerosols over Austria in the spring and summer seasons originate mainly from Sahara (dust) and Canada (biomass burning), coming over Germany.

A comparison of the results with the CALIPSO satellite measurements over Austria is also performed.

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