Remote Monitoring of the Emission and Dispersion of Air Pollutants from Point Sources by a Mobile LIDAR/SODAR System

A guest contribution

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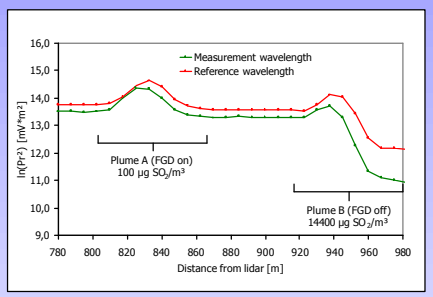
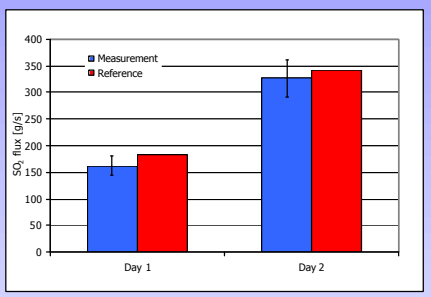
This contribution illustrates the capabilities of the space resolving remote sensing techniques LIDAR (light detection and ranging) and SODAR (sound detection and ranging).

Examples given here show investigations of the flue gas plume of a fossil fueled power plant during a temporary shut-down of the flue gas desulphurisation unit (FGD). SO_2 emission fluxes are determined and the dispersion of the propagating plume is measured.

Remote monitoring of emissions

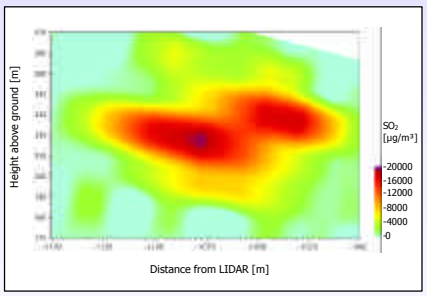


Simultaneous measurement of SO_2 concentrations in two different flue gas plumes by one single LIDAR beam.

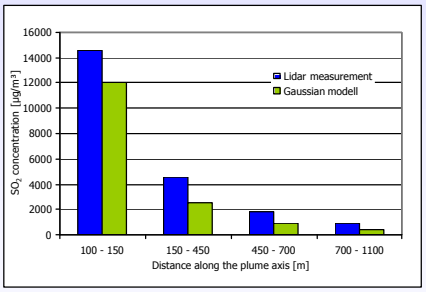


SO_2 emission fluxes derived from LIDAR and SODAR measurements and comparison with reference data provided by the plant operators

Generation of validation data sets for transport models



Cross section of SO_2 concentrations in a flue gas plume perpendicular to the plume axis



LIDAR measurement of SO_2 concentrations along the plume axis and comparison with results of a Gaussian model

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