

O4-07 REMOTE SENSING OF SO₂ AND NO₂ EMISSIONS FROM INDUSTRIAL SOURCES IN MEXICO BY PASSIVE DOAS

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The importance of knowing the amount and distribution of pollutants in the atmosphere requires the use of innovative techniques with the appropriate sensitivity and precision. Differential Optical Absorption Spectroscopy (DOAS) is a remote sensing technique widely used in a variety of platforms and applications for studying trace gases in the atmosphere. In this contribution, a passive DOAS using scattered sunlight from the sky was used in order to observe and monitor the absorption of UV and visible light from SO₂ and NO₂, respectively, emitted by industrial sources. Column concentrations of these gases were measured while traversing underneath the plume with a car. GPS and wind speed data measured simultaneously served to estimate instantaneous fluxes.

Results are presented from measurements performed downwind of a large refinery in the town of Salina Cruz, Oaxaca, during June of 2004. Also, the emissions from a power plant located in Tula de Allende, Hidalgo, were analyzed by this optical remote sensing technique during October of 2005 as part of an ongoing study to evaluate the results from available dispersion models. Passive DOAS is found to be a powerful tool for measuring industrial emissions indirectly, having the advantage of doing it from a distance and allowing to obtain the plume's physical dispersion profiles.