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Atmospheric Measurements by Cavity Enhanced Absorption Spectroscopy

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Since the last decade, atmospheric environmental monitoring has benefited from the development of novel spectroscopic measurement techniques owing to the significant breakthroughs in photonic technology from the UV to the infrared spectral domain [1].

In this presentation, we will overview our recent development and applications of cavity enhanced absorption spectroscopy techniques for in situ optical monitoring of chemically reactive atmospheric species (such as HONO, NO_3, NO_2, N2O5) in intensive campaigns [2] and/or in smog chamber studies [3]. These field deployments demonstrated that modern photonic technologies (newly emergent light sources combined with high sensitivity spectroscopic techniques) can provide a useful tool to improve our understanding of tropospheric chemical processes which affect climate, air quality, and the spread of pollution.

Experimental detail and preliminary results will be presented.

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