



New Mobile Lidar Systems Aboard Ultra-Light Aircrafts

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Two lidar systems embedded on ultra light aircraft (ULA) flew over the Rhone valley, south-east of France, to characterize the vertical extend of pollution aerosols in this area influenced by large industrial sites. The main industrial source is the Etang de Berre (43°28' N, 5°01' E), close to Marseille city. The emissions are mainly due to metallurgy and petrochemical factories. Traffic related to Marseille's area contribute to pollution with its ~1500000 inhabitants. Note that the maritime traffic close to Marseille may play an important role due to its position as the leading French harbor . For the previous scientific purpose and for the first time on ULA, we flew a mini-N2 Raman lidar system to help the assessment of the aerosol optical properties. Another Ultra-Violet Rayleigh-Mie lidar has been integrated aboard a second ULA. The lidars are compact and eye safe instruments. They operate at the wavelength of 355 nm with a sampling along the line-of-sight of 0.75 m. Different flights plans were tested to use the two lidars in synergy. We will present the different approaches and discuss both their advantages and limitations.

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