



## **Aerosol extinction profiles retrieved from MAX-DOAS measurements at two Antarctic stations**

Laura Gómez-Martín (1,2), Cristina Prados-Román (1), Olga Puentedura (1), Carmen Córdoba-Jabonero (1), Mónica Navarro-Comas (1), Héctor Ochoa (3), and Margarita Yela (1)

(1) Instituto Nacional de Técnica Aeroespacial - INTA, Atmospheric Research and Instrumentation Branch, Madrid, Spain (lauragm.madrid@gmail.com), (2) Groupe de Spectrométrie Moléculaire et Atmosphérique, URM CNRS 7331, UFR Sciences Exactes et Naturelles, Moulin de la Housse, BP 1039, 51687 Reims Cedex 2, France, (3) National Antarctic Direction (DNA)/Argentinian Antarctic Institute (IAA), 25 de Mayo 1143, San Martín Provincia de Buenos Aires, Argentina

Vertical aerosol extinction profiles up to 4 km have been obtained from Multi-AXis Differential Optical Absorption Spectroscopy (MAX-DOAS) measurements during 2015 at two Antarctic stations: Belgrano II (77° 52' S, 34° 37' W) and Marambio (64° 13' S, 56° 37' W). Two MAX-DOAS instruments, one operating in the ultra-violet (UV) and the other one in the visible (VIS) spectral range, are routinely in operation in both stations. The O4 Differential Slant Column Densities (DSCD) obtained with these instruments have been used together with radiative transfer model calculations to estimate extinction vertical profiles following the Optimal Estimation Method (OEM). In this work, the seasonal evolution of the UV and VIS aerosol extinction profiles in the lower troposphere at both Antarctic stations is presented. In order to validate our results, the retrieved MAX-DOAS extinction profiles have been compared with those provided by the space-borne CALIOP/CALIPSO for a few selected days.