

## **Stratospheric and Mesospheric Ozone Profile Intercomparison at OAPA, Río Gallegos**

F. Orte (1), J. Salvador (1), E. Wolfram (1), R. D'Elia (1), J. Quiroga (1), F. Zamorano (2), H. Ohyama (3), A. Mizuno (3), T. Nagahama (3), and E. Quel (1)

(1) CEILAP (CITEDEF-CONICET), UMI-IFAECI-CNRS 3351, Juan B. de Lasalle, Villa Martelli, Argentina, (2) Laboratory for Atmospheric Research, University of Magallanes, Punta Arenas, Chile, (3) Institute for Space-Earth Environmental Research, Nagoya University, Nagoya, Japan

Since October 14th to 18th, 2014, a new ozone intercomparison campaign OZITOS (OZone profile aT Río Gallegos) has been held in the Observatorio Atmosférico de la Patagonia Austral (OAPA) ( $51.6^{\circ}$  S,  $69.3^{\circ}$  W), Argentina, into the framework of SAVERNet project (South American Environmental Risk Management Network). Ozone profiles retrieved from three independent observing instruments [Differential absorption Lidar (DIAL), O<sub>3</sub>-sonde, Millimeter Wave Radiometer (MWR)] are intercompared with the aim to validate MWR profiles. The autocalibrated DIAL instrument, which has been included in the Network Data for Atmospheric Composition Change (NDACC) since 2008, is able to measure ozone vertical distribution from 15 to 40 km. The O<sub>3</sub>-sonde covers the altitude range from the ground to  $\sim$ 33km and it was launched during the campaign by the Laboratorio Investigaciones en Ciencias Atmosféricas, Chile, together with the OAPA. Finally, the millimeter wave radiometer, which belongs to Nagoya University, Japan, was installed in the OAPA by 2011 and it retrieve ozone profile between 25 and 75 km from the microwave ozone emission at 110GHz. The well documented Atmospheric Radiative Transfer Simulator (ARTS) is used to invert the signal detected with the MWR. In addition, a comparison with Microwave Limb Sounder (MLS - AURA) is also given. Due to the fact that the mentioned instruments have different altitude resolution, it is necessary to degrade the resolution to the low vertical resolution profile. Therefore, the altitude resolution of the DIAL, O<sub>3</sub>-sonde and MLS instrument are degraded using the MWR Averaging Kernel functions. The results of intercomparison present good agreement among the different systems into the overlap altitude range.