

STRATOSPHERIC OZONE OBSERVATIONS AT MID-LATITUDE NDACC STATION

RIO GALLEGOS (51° 36'S, 69° 19'W) - PATAGONIA

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the last ten-years using stratospheric ozone profiles from DIAL system at Rio Gallegos combined with ground-based and satellite instruments are done.

As a part of environmental studies in the southern hemisphere, the Laser and Application Research Center (UNIDEF-MINDEF) with the financial support of JICA (Japan International Cooperation Agency) and the collaboration of LATMOS France, mounted a ground-based remote sensing site at Rio Gallegos city (51° 36'S, 69° 19'W), in the Southern part of Argentina. The site denominated Atmospheric Observatory of Southern Pata measurements of stratospheric ozone vertical distribution with DIAL remote sensing technique and passive sensors to measure solar UV irradiance since 2005. onia (OAPA) has carried out systemati The Patagonian region is affected each spring season by the polar vortex, which brings ozone-depleted air masses over the continent. In this study, we present the results from the balloon-borne and DIAL profiles obtained during the OZone profile at Rio GallegOS (OZITOS) campaign held in 2014 and 2015 in the framework of the SAVER-Net, South American Environmental Risk Management Network, which is five-year trilateral project among Argentina, Chile and Japan promoted by Japanese funding agencies JICA and JST under SATREPS, Science and Technology Research Partnership for Sustainable Development, program. Influence of the polar vortex over the continent during the spring season over

Site Description Río Gallegos



Figure 3. Inter-comparison between stratospheric ozone profile measured by DIAL instrument at OAPA Site (red) and the sonde (blue) launched from the local Airport by the personal LICA Lab. Magallanes Univ.(Chile). Oct 15 and 18 two sondes were launched during the same night. The correlation between both instruments show more observations provided by DIAL instrument, this is due the large integration time during the night which might be separate at independent observations

Conclusions

Observations with multiple instruments has been performed since 2005 at OAPA. Monitoring shown high dynamic activities when polar vortex is close. This joined activity between Argentina, Chile and Japan for the ozone observation profiles at Patagonia in the framework of SAVER-Net project has been very successful from scientific and social point of view, given the opportunity to researchers of three countries to share their experiences and work together for a common goal. The preliminary analysis of the results obtained in this activity shows good agreement between different instruments and puts in evidence the high quality observation capability that SAVER-Net project produce for the monitoring of ozone hole. These experiences have enabled joint monitoring from Punta Arenas and Río Gallegos through differents remote sensing techniques.

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Reference 1.van der A, R. J., M. A. F. Allaart, and H. J. Eskes (2010), Multi sensor reanalysis of total ozone, Atmos. Chem. Phys. Discuss., 10, 11,401–11,448, doi:10.5194/acpd-10-11401-2010.

O, Number Density [mol/cm³]

was

between the University of Magallanes and the OAPA site was performed. In the case presented the balloon sonde launched on November 3 had direction towards

coincidental. The observations were made inside polar

the city of RG. The DIAL measurement

vortex according with analysis of eq. latitude.

 Wolfram, E. A., Salvador, J., Orte, F., D'Elia, R., Godin-Beekmann, S., Kuttippurath, J., Pazmiño, A., Goutal, F., Casiocia, C., Zamorano, F., Paes Lame, N., and Ouel, E. J. The unusual persistence of an acoan hole over a southern mid-latitude station during the Antarctic spring 2008: a multi-nistrument study, Ann. Geophys. 30, 1435-1449. doi:10.5194/anges-30-1435-2012, 2012



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SAVER.Net team at Río Gallegos during OZITOS+ Campaign on October 2014.