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SAVER-Net: An Observing and Data Distribution Network of Atmospheric Ozone, UV Radiation, and Aerosols for the Southern Part of South America

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The South-Patagonian region in South America is the southernmost habitable area in the world, and the inhabitant of this region directly suffers the influence of ozone hole that overpasses the region during austral late spring. In addition, volcanic ashes spread from the Andes volcanoes cause serious damages on agriculture, live stocks, forestry, tourism, and daily life near the volcanoes and make traffic jams of airlines over much larger area. However, the present monitoring system for ozone/UV and aerosols in the South American continent lags significantly behind the northern hemisphere such as Europe and US. To overcome this situation, we have been conducting an international project to build a ground-based observing network of ozone/UV and aerosols to detect the risks for the local habitant and to establish a communication network distributing near-real-time risk information and near-future forecasts based on the observations and model calculations. The name of the project is SAVER-Net, South American Environmental Risk Management Network, which is five-year trilateral project among Japan, Argentina, and Chile promoted by Japanese funding agencies JICA and JST under SATREPS (Science and Technology Research Partnership for Sustainable Development) program. The core observation site for ozone and UV is OAPA, Observatorio Atmosférico de la Patagonia Austral (Atmospheric Observatory in the Southern Patagonia), in Rio Gallegos (51.6 S, 69.3 W), Argentina, operated mainly by CEILAP, where a millimeter-wave spectroscopic radiometer (MWR), a differential absorption lidar (DIAL), UV radiometers, and Brewer spectrometer were in operation. The MWR can continuously provide the vertical profiles of ozone between $\sim$20 km and $\sim$70km altitude over day and night with a time resolution of $\sim$30 min, but the vertical resolution is a bit coarse, $\sim$ 10km. On the other hand, the DIAL can resolve the vertical profile with much higher resolution, $<$ 1 km, between $\sim$12 km to $\sim$45 km altitude, but the observable condition is limited in the night with clear sky. Those two instruments are complementary and compensate for weakness with each other. In addition to OAPA, University of Magallanes in Chile joins to the observations by using ozonesonde, UV radiometer, and Brewer Spectrometer from Punta Arenas, Chile, and also UV radiometers at more than 25 points over Argentinean and Chilean territories mainly operated by National Weather Services in Chile (DMC) and in Argentina (SMN) are utilized for the network. All the observed data will be compiled at the Data Center in Buenos Aires and will be distributed for not only the scientific purpose but also public services through the ministry of health and the ministry of environment of Chile and Argentina. In addition to the observations, model calculations for the ozone and UV forecast are developed by a working group led by NIES, Japan.

In my presentation, I will present the overview of the aim, framework, and the present status of the project, and the details of the scientific outputs will be presented by the colleagues of the project in this symposium.