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Downscalling of The Total Ozone Column Data of Reanalysis Era40, Through The RCM PRECIS, and Validation with The Espectrophotometer Dobson Data In Argentina..

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The ozone shows two different behavior in the atmosphere; in the troposphere is a reactive gas produced through different kind of reactions, therefor is consider as secondary gas. In high concentrations produce negative effects on animals and plants (pollutant). Besides, the ozone is a greenhouse gas with impact over the climate. On the other hand, in the stratosphere, the ozone protects life by filtering the UV radiation.
In addition, this study aim to generate monthly maps in high resolution from Reanalysis ERA40 data, adapted to this region through the Regional Climatic Model (RCM) PRECIS (Providing Regional Climates for Impacts Studies), validating and calibrating the model with Dobson spectrophotometer in four stations.
The observation points are: Buenos Aires (34°35'24 S 58°28'48°W) height 25 m. a. s. l, Comodoro Rivadavia (45°78'S 67°50'W) height 46 m. a. s. l. Ushuaia (54°85'0 S, 68°31'0 W) height 18 m. a. s. l. and Marambio (64°24'0 S, 56°62'W) height 198 m. a. s. l.
Some preliminary outcomes, show that Dobson data, respect with ERA40 data (resolution 2.5°x2.5°), have the following correlations: in Buenos Aires R2=0.6140, in Comodoro Rivadavia R2=0.8319, in Ushuaia R2=0.2170, and finally in the Antarctic Station Marambio R2=0.0097. In all the cases, the ERA40 data are overestimated respect to the Dobson data. Other results have been obtained from ERA Interim data (resolution, 0.8°x0.8°), improving the correlation and correction factors. In this sense, the goal is enhance even more the ERA40 data increasing the resolution to 0.44°x0.44° in order to obtain the first monthly maps of total ozone column.