



Satellites and SAOZ total ozone comparison in the tropics

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All satellites total ozone measurements available from SBUV, OMI-T, OMI-D, OMI-CCI, GOME-CCI, GOME2-CCI, SCIAMACHY-CCI, NPP and IASI, since 2004 until 2015 now are compared to those provided by the UV-Vis SAOZ/NDACC spectrometer at two tropical stations of Reunion Island in the Indian Ocean and Bauru in Southern Brazil. The differences between satellites and SAOZ show systematic seasonal variations of 2-3% (6-9 DU) amplitude and sharp negative peaks in Jan-Mar in the austral summer. The largest low peaks seen on IASI, OMI-T, NPP and OMI-CCI at Reunion are shown to be due to hurricanes. In turn, those seen in Brazil correlate with high altitude overshooting convective clouds. The origin of the seasonality of the Sat-SAOZ difference is still unknown. Surprisingly and though there has been no change in either SAOZ instruments or data analysis processes, the amplitude of the seasonal cycle of the Sat-SAOZ difference reduces in 2012 and drops to less than $\pm 0.5\%$ (1.5 DU) after 2013 in Reunion Island and less than $\pm 1\%$ in Bauru, reduction for which there is no clear explanation.

Shown in the presentation will be the demonstration of the impact of hurricanes and high altitude clouds on satellites ozone retrievals, followed by a discussion of possible causes of seasonality of Sat-SAOZ difference and the its amplitude drop after 2012.