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Ozone and halogens monitoring in the South Western region of the Iberian Peninsula during 2004-2016 period

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Since the beginning of 2004, the SPATRAM (Spectrometer for Atmospheric Tracers Monitoring) equipment performs measurements of zenith sky scattered radiation, at the Evora station (38.57N, 7.89W). SPATRAM is a scanning spectrometer with an optical spectral resolution of about 0.5 nm in the whole scanned spectral range (300-800nm). Two additional optical devices are connected with optic fibers to the instrument main body: the VELOD (Vertical Looking Device) telescope to measure the zenith sky scattered radiation and the MIGE (Multiple Input Geometry Equipment) platform to perform measurements for directions away the zenithal one. The DOAS (Differential Optical Absorption Spectroscopy) algorithms together with a radiative transfer model are applied to the spectral measurements performed in zenith configuration and carried out with the system installed at the Evora station allowing for the retrieval of total columns and vertical profiles of NO_2 and O_3. On the other hand the measurements obtained with the MIGE device are processed with the MAX-DOAS (Multi Axis) procedures for the assessment of the same quantities as before, but in the lower troposphere/PBL and for a larger number of atmospheric compounds. In this work, the instrumental setup is briefly described. Moreover, the DOAS and MAX-DOAS algorithms are introduced and the results obtained during the full period of measurements of the SPATRAM system are presented and discussed together with a trend analysis for NO_2 and O_3 total columns. Finally the preliminary results for the retrieved halogen compounds are shown.