



Twenty years of aerosol optical depth in the UV-B range at Thessaloniki, Greece

C. Meleti, A. F. Bais, S. Kazadzis, N. Kouremeti

Laboratory of Atmospheric Physics, Aristotle University of Thessaloniki, Greece,
(meleti@auth.gr / Fax: +302310 998090)

The Brewer spectrophotometer #005 has been monitoring total ozone and SO₂ column at the town of Thessaloniki, Greece since 1984. The spectrophotometer's standard method of retrieving both gases requires the implementation of direct sun measurements at five nominal wavelengths 306.3, 310.0, 313.5, 316.8 and 320 nm. In this study, the recorded raw photon counts at these wavelengths, after applying the appropriate processes and zero air mass Langley extrapolation, were used to retrieve the corresponding aerosol optical depths (AOD) for the period from 1984 to 2003. Using pyranometer data, the restrictions for cloud undistorted AODs were imposed. Validation of the retrieved AOD at 320 nm with the corresponding measurements of a co-located double Brewer spectrophotometer took place. The derived AOD time-series was examined for its short and long-term variations. As it was found, the highest values of AODs occur in the summer while decrease of the AODs is observed during the last years.