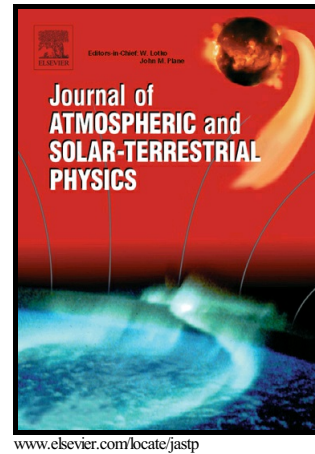


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Spatial and temporal variability of the atmospheric turbidity in Tunisia.

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Abstract

Atmospheric turbidity is an important parameter in meteorology, climatology and for providing hindsight on particulate air pollution in local areas. In this work we exploit 1260 direct solar radiation measurements performed in Sfax (Center Tunisia), from March 2015 to February 2016. These measurements were made with a pyrheliometer only when clouds did not obstruct the solar disk. The atmospheric turbidity is quantified by the means of both the Linke's turbidity factor (T_{LI}) and Angström's coefficient (β). Over the year, values of T_{LI} and β are found to vary in the ranges 1-15 and 0-0.7, with the most probable values around 3.5 and 0.05, respectively. However, a marked seasonal pattern is observed for the two turbidity parameters. They achieve their maximum in the spring and summer months, their minimum in winter and autumn appears as a transitional period. The comparison of the results obtained in Sfax with those of three AERONET stations located in north (Carthage), central-north (Ben Salem), and south (Medenine) Tunisia,

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