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Analysis of Chile temperature time series and correlation with sunspot, and quasi-biennial oscillation

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The ablation of meteoric material at heights around the mesopause gives rise to layers of free metals atoms such as sodium and iron. In the case of sodium, the layer extends from about 80 km to 110 km. Sporadic layers, first detected by the INPE lidar, operating at São José do Campos (23°S, 46°W), are thin layers of enhanced concentration superposed on the background layer. In the case of sodium, the layers are typically a few km thick, have peak concentrations several times the background concentration, and last from a few minutes to several hours. These layers have been studied extensively since their first observation more than 20 years ago, and are believed to result from the neutralization of wind-shear concentrated sodium ions. Much more recently a new type of sporadic layer was reported from observations made by a sodium lidar operating at Arecibo, Puerto Rico. These layers, which extend over a height range of about 10 km, often form a C-shaped structure on the height/time lidargram record and, for this reason, will be referred to as C-structures. In this presentation we will discuss the possible origin of C-structures on the basis of simultaneous measurements of the sodium distribution at São José do Campos and meteor wind measurements made at a site approximately 100 km away.

Keywords: **sporadic E-layer, meteoric ablation, lidar data**

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