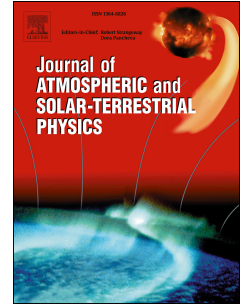


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# Solar signal on regional scale: A study of possible Solar impact upon Romania's Climate

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## Abstract

The topic of this paper is to investigate whether a solar signal exists in the variation of climatic parameters at regional or local scale. This was done using eight climate parameters recorded in Romania during 1961-2013 and statistical methods as trend, composite and wavelet analysis. A weak solar influence with a clear spatial pattern was identified, especially during the cold season, on cloud cover and temperature. During the warm season, the influence seems to be spurious. The mountain chain in the distribution of the most parameters induces persistent disparities. Possible mechanisms for the solar influence on climate at regional and local scale are proposed.

*Keywords:* solar activity, climate parameters, westerly atmospheric circulation, regional warming trend, Romania

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## 1. Introduction

During the last decades numerous studies have shown that the solar influence upon climate variability at global or hemispherical scale cannot be neglected (Gray et al., 2010; Ineson et al., 2011). Generally, the solar trademark was identified in pressure

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