

Space Studies of the Earth's Surface, Meteorology and Climate (A)

Atmospheric Remote Sensing: Surface Layer, Troposphere, Stratosphere and Climate (A11)

Consider as poster only.

SOLAR CYCLE AND METEOROLOGICAL PARAMETERS CORRELATIONS FOR SOUTH AMERICA - SOUTH OF BRAZIL (29°S, 53°W)

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The interest in the role of the Sun's activity on the climate changes has been revived by the concern and uncertainty surrounding the questions about the anthropogenic influence on the climate. The focus of these studies is more towards Earth's surface and its response. Besides, to study the effects of solar UV global irradiation, which is the energy (dose) or the integral of irradiance over arbitrary time periods such as days and years, there is a need to quantify variations of solar UV energy received at the Earth's surface and its dependence with space, time and with some particular meteorological conditions. The climate of a planet, such as Earth, at a given time may be primarily characterized by its surface temperature, and by the variation of the latter with latitude and season. Other parameters that can be taken into account are rain and relative humidity. In this work, monthly historical records (1970-2007) of temperature, rainfall and relative humidity at the Meteorological Station of the Federal University of Santa Maria (29°S, 53°W) and solar radio flux at 10.7cm from NOAA's site were used to study the possible influence of the 11-year Solar Cycle over meteorological parameters for South America - South of Brazil (29°S, 53°W). Wavelets analyses were applied in order to find the coherence and cross-correlations in terms of direct or indirect effect of the solar cycle on the meteorological parameters for the surface and lower troposphere, the results are reported.