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SOLAR VARIABILITY AND SOME INTERRELATION WITH TERRESTRIAL CLIMATE

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Abstract

Processes responsible for solar variability with time-scales and related climatic variations are summarized. The variation of the X- and Y -components of the solar magnetic fields indicates that the X- and Y- components vary significantly almost in a reverse manner. In this paper we have reported the variation of sunspot number and total solar irradiance for a period of 1995 to 2012. The variation of global surface temperature and the associated temperature anomaly of both northern and southern hemisphere for the same period have also been taken into analysis. The correlation between 11- year averaged sunspot number and the global surface temperature as well as that between 22- year averaged sunspot number and the global surface temperature when considered indicates that for both the cases the sunspot activity is declining while global temperature is enhancing for the last three decades.

Keywords: Solar variability, global temperature, sunspot number.