

Abstract

Eman Shafik Magahed

Spectral Analysis of Solar Variability and Their Possible Role on the Global Warming

Our understanding of the indirect effects of changes in solar output and feedbacks in the climate system is minimal. There is much need to refine our understanding of key natural forcing mechanisms of the climate, including solar irradiance changes, in order to reduce uncertainty in our projections of future climate change. Through the years the conflict between researchers about whether global warming is a human-generated phenomena a result of solar variability has raised many question marks. The aim of this work is to try to answer some of these questions by studying the possible role of some solar variability parameters such as the aa geomagnetic index and the sunspot number (Rz) in global temperature changes. Here, we present a correlative study of the possible contributions for the two components that may be closely associated with the climate, throughout the last 130 years (1880-2008). We compared the correlation analysis and the power spectral density (PSD) of the Rz and aa with that of the continuous records of the GT in order to get a closer look at a possible connection between them.