

Abstract

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Investigation of possible contribution of the Solar and geomagnetic activities on global surface temperature.

Abstract. Global warming in the troposphere and the decrease of stratospheric ozone concentration has become a major concern to the scientific community. The increase in greenhouse gases and aerosols concentration are believed to be the main cause of this global change in the lower atmosphere and in stratospheric ozone. However, there are natural sources, The present work we have investigated the effect of solar and geomagnetic parameters on the mean surface air temperatures recorded at countries which covers a wide range of geographic latitudes. In this case we have studied six countries via northern and southern hemispheres to enable us to understand the existence of solar activity effects on the regional/global temperatures. We considered the parameters temperature and solar activity indicators data for the period data ranging from 1880 to 2011. Generally, our results displayed that the solar variability parameters played an important role in climate changes and cannot be excluded from the responsibility of continuous global regional warming. We think that the combined effect of solar-induced changes and increase in the atmospheric greenhouse gases offer the best explanation yet for the observed rise in average global temperature over the recent years.