



On the dependence of global surface air temperature on solar and geomagnetic activity

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In this work we analyse the dependence of global surface air temperature (anomaly temperature-dT) on solar (sunspot number-Rz) and geomagnetic activity (aa index) over different time-scales. We use annual averages in the period 1880-2000 and decompose the data in frequency levels through the wavelet multi-resolution analysis. We have observed that the dT series is better correlated with aa than with Rz in most of the time-scales. We have also noticed that the 22-year solar activity signal is stronger and more persistent in dT than the 11-year signal is. The long-term trend curve of dT has a format different from the Rz and aa long term curves. This might implies in that solar-geomagnetic activity effects are more restricted on time-scales until the 22-year cycle. The long term variations are most likely to be influenced by terrestrial factors i.e.- anthropogenic changes.