

Influence of solar activity on the tropical cyclogenesis in Western Pacific

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A remarkable progress was made in the last decade in the study of specific parameters of the ocean-atmosphere system influencing the hurricane development, such as ocean surface temperatures and pressure, initial wind vorticity, etc. The correlation between the Southern Oscillation Index, El Ninho and the tropical cyclones (TC) was revealed. However, connection of TC development with solar-magnetospheric activity is rarely considered in such studies.

In this work we search correlation between TC rise in Pacific ocean and parameters of solar and geomagnetic activities for time period of 1945 to 2005 years. Preliminary results of the study show that correlation coefficient between the Wolf numbers and the Northern East TC per year is lower than 0.3, however the correlation with the Northern and Southern West TC rates is higher, about 0.75. This correlation becomes even greater when El Ninho influence is accounted. The spectral analysis of the West Pacific TC rates also shows an existence of the 11-year periodicity, which was observed in the Atlantic tropical cyclogenesis too.