



Relation of long-periodic variations of thunderstorm VLF radionoise intensity and solar wind density

R. Karimov, V. Mullayarov, V. Kozlov

Yu.G. Shafer Institute of Cosmophysical Research and Aeronomy SB RAS, Russia
(mullayarov@ikfia.ysn.ru)

This work presents the results about relation long-periodic variations of VLF-noise intensity of the thunderstorm origin and solar wind density. The data of the continuous analogue registration of the VLF-radionoise intensity at frequency 8,7 kHz at the Yakutsk station (62N, 129.7E) for a period of 1979-1996 years were used for estimate a degree of the thunderstorm activity. To receive VLF noise in Yakutsk, the loop aerial directed in the east-west plane is used; hence, the main contribution to the level of VLF noise registered in Yakutsk during the winter comes from the African world thunderstorm center. The determining contribution to the VLF-noise level in summer is given by the local thunderstorm activity. For the analysis of relation of VLF-noises intensity variations with solar wind density variations, the correlation analysis was used. It was found that there is a significant relation a thunderstorm activity with solar wind density variation. The obtained result can be explained by the physical mechanism in that solar wind acts on the global atmospheric circuit, and therefore on a thunderstorm activity.