

Frequency-time spectrograms of electromagnetic waves observed in the Earth's inner magnetosphere in the frequency range 1-8 kHz sometimes contain nearly horizontal and almost parallel intense lines. Such events were observed both by ground-based instruments and satellites, and they are called Magnetospheric Line Radiation (MLR). We systematically analyze 1230 MLR events identified in the data of the DEMETER spacecraft (2004-2010, altitude of about 700 km). We focus on a possible connection between the event occurrence and solar wind parameters. Long analyzed data interval allows us to evaluate a possible influence of the solar cycle and season of the year. We show that there is a statistically significant correlation between MLR events and solar wind parameters, and that the events are observed more often during the winter months and preferably during the solar maximum. The events occur less frequently at geomagnetic longitudes of South Atlantic Anomaly (SAA). We analyze spectra of energetic electrons precipitating in this region at the times of MLR events, which are supposed to be related to the wave generation.