

Electromagnetic waves are crucial for energy transfer in the nearly collisionless plasma of the Earth's inner magnetosphere. The waves in the frequency range 1–8 kHz whose visualisation in the form of frequency-time spectrograms reveals a harmonic frequency modulation of the wave intensity are called magnetospheric line radiation (MLR). Waves characterized by a nearly periodic time modulation of the wave intensity observed at frequencies between about 0.5 and 4 kHz are called quasiperiodic (QP) emissions. Although both types of the events were repeatedly observed by ground-based instruments and low-altitude satellites, their origin remains still unclear. Between 2004 and 2010 these wave events were measured by the DEMETER spacecraft (almost Sun-synchronous orbit, altitude of about 700 km). This thesis presents a systematic study of the properties of the observed events, a comparison of the observations by the spacecraft and ground-based instruments, and an investigation of a relation to solar wind parameters.