



## Quasiperiodic Emissions and Associated Energetic Electron Precipitation Bursts

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Quasiperiodic (QP) emissions are electromagnetic waves at frequencies between about 0.5 and 4 kHz occurring in the Earth's inner magnetosphere, whose wave intensity exhibits a nearly periodic time modulation of the wave intensity with typical modulation periods from a few tens of seconds up to a couple of minutes. Although such emissions are rather routinely observed both by spacecraft and ground-based instruments, their origin is still not fully understood. We use a large set of more than 2,000 of these events observed by the low-altitude DEMETER spacecraft to analyze how the wave properties (frequency and L-shell ranges, modulation period, wave intensity) depend on relevant controlling factors. Moreover, we use in-situ measurements of precipitating energetic electron fluxes to identify possible precipitation peaks matching individual QP wave elements. Several such events are identified and their detailed analysis is performed. Considering that the precipitating particles follow magnetic field lines from the interaction region down to the observation point (unlike the waves which may propagate unducted), we suggest that such events can be advantageously used to determine the location and spatial extent of the anticipated generation region of the emissions.