



Quasi-Periodic Whistler Mode Emissions in Saturn's Inner Magnetosphere

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The Cassini Radio and Plasma Wave Science (RPWS) instrument often detects at Saturn a series of quasi-periodic (QP) whistler mode emissions that rise in frequency and repeat every few to about ten minutes. These QP emissions are detected about 5% of the time when Cassini is within $\sim 5.5 R_s$ of Saturn and are primarily observed near the magnetic equator. They are usually detected in the frequency range of about 1 to 3 kHz, and appear to be related to electrons with energies of a few keV. Their spectral characteristics are very similar to the quasi-periodic whistler mode emissions detected in Earth's magnetosphere. However, it is unclear if the same type of source generation can explain the Earth and Saturn QP emissions.