



Whistlers and Electron Trapping in the Earth's Magnetosphere

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Large amplitude (>100 mV/m in E) Whistler-mode signals have been observed by Wind-Waves and STEREO-SWaves. These whistlers are generated by a “pancake” electron distribution function. Episodes of large whistlers are preceded by elevated AE index, so the pancake distributions are presumed to be recent injections. The whistlers are oblique, the signals are extremely bursty and the frequency often rises during a burst sequence. The electric waveforms show a characteristic deformation. It will be shown that this is due to electron trapping. This allows a direct determination of the wavevector of the whistler in cases where there is no magnetic field information, as on STEREO. The wavevectors of the observed whistlers are significantly oblique. The phase of the trapping signal contains information about the direction of energy flow between the waves and the electrons.