# Current Spectrum and Frequency Gap Forming Whistler-Mode Sideband Wave

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Using a new equation system, the trajectories of non-linear Doppler-shifted cyclotron resonant electrons interacting with the whistler mode carrier signal in the magnetosphere are examined. It is imagined that the trajectories just near the separatrix have direct effects upon the generation of self-exciting whistler-mode sideband waves. Thus, the trajectories are labeled in detail and the characteristics of them are clarified by the numerical calculations. Especially, this paper is aimed at the presentations of the scatter of Doppler-shifted cyclotron resonant electrons, and the formation of trajectory gap near the separatrix in the phase space.