



## **Modeling quasi-periodic ELF/VLF wave emissions and related variations in energy distribution of energetic electrons in the Earth's magnetosphere**

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We study the generation of quasi-periodic ELF/VLF wave emissions in the Earth's magnetosphere due to the whistler cyclotron instability on the basis of self-consistent quasilinear theory taking into account the evolution of both pitch-angle and energy distribution of energetic electrons.

Numerical simulations based on this model confirm that taking into account realistic energy distribution results only in quantitative, but not qualitative, differences in the generation regimes compared with the simplified model assuming monoenergetic energy distribution.

The updated model allows us to study temporal evolution of energy distribution of precipitated electrons causing auroral pulsations, which is important for comparison of the model with observations.