

## Arase observation of electron pitch angle scattering by Electrostatic Cyclotron Harmonic waves

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Electrostatic Cyclotron Harmonic (ECH) waves have been considered as one candidate to cause pitch angle scattering of electrons in the energy range from a few hundred eV to several tens of keV. Theoretical studies have suggested that electron pitch scattering by ECH waves is enhanced at lower pitch angle near the loss cone. Due to the insufficient angular resolution of particle detectors, it has been difficult to reveal the ECH-driven scattering based on electron measurements. This study reports on variation in electron pitch angle distributions associated with intense ECH wave activity observed by the Arase satellite. The variation is characterized by the decrease in fluxes at lower pitch angles near the loss cone, and energy and pitch angle dependence of the flux decrease is consistent with the region of enhanced pitch angle scattering rates predicted by the quasi-linear theory. This study gives the evidence for energy-pitch angle dependence of pitch angle scattering driven by ECH waves.