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PEM007-P02

Room:Convention Hall

Time:May 27 15:00-16:15

Interactions between Oblique Whistler-Mode Waves and Energetic Electrons in the Earth's Radiation Belt

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We analyze the mechanisms of interactions between oblique whistler-mode waves and energetic electrons in the Earth's radiation belt. By the dispersion relation of whistler-mode wave, we calculate the refractive index in relation to propagation angle. We find that higher propagation angle makes the refractive index larger. Taking into account the dispersion relation, we perform the test particle simulations of energetic electrons interacting with oblique whistler-mode chorus. The source particles are assumed to be evenly distributed in gyro-phase. We calculate the trajectories of all electrons and energy exchanges, changing initial parallel velocity. The exponential terms appeared due to oblique propagation, in which include trigonometric function are calculated by using Bessel functions. We analyze energy changes and magnetic moment changes of electrons in case of Landau resonance and cyclotron resonance.