Pair Annihilation Effects on Lower Hybrid Oscillation in Semi-Bounded Magnetized Dusty Pair Plasmas

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The electron-positron pair annihilation effects on the electrostatic hybrid resonance oscillation are investigated in semi-bounded magnetized dusty pair plasmas. The surface wave dispersion relation is obtained by the plasma dielectric function with the specular reflection condition. The result shows the existence lower hybrid resonance oscillation modes in semi-bounded dusty pair plasmas. It is found that the electron-positron annihilation events enhance the lower hybrid resonance oscillation frequency. It is also found that the lower hybrid resonance frequency decreases with increasing the ratio of the positron density to the electron density. In addition, the lower hybrid resonance frequency decreases with increasing the strength of the magnetic field.

Key words: Surface Waves; Pair-Ion-Dust Plasmas.