Harmonics Dependent Electrostatic Ion-cyclotron Instability with Perpendicular AC Electric Field

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Current driven oblique propagating ion-cyclotron instability has been studied for higher harmonics with perpendicular AC electric field. The effects of temperature anisotropy, velocity shear scale length and A.C. electric field frequency have been discussed by using the method of characteristic solution in the region of space.

In the presence of AC electric field the growth rate increases with the increase in velocity shear scale length and is greater for greater harmonics. The similar situation also arises in the case of temperature anisotropy. But the increase of AC electric field frequency decreases the growth rate for the harmonics.

Keyword: - Electrostatic Ion, Cyclotron instability