

[CS13] Perpendicular resonance near the ion cyclotron range of frequencies and heating of ions

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In a heavy ion plasma the existence of perpendicular resonances will greatly modify the wave propagation characteristics around the ion cyclotron range of frequencies (ICRF). We investigate the problem of the wave propagation in heavy-ion plasmas around the ICRF when waves propagate nearly perpendicular to the ambient magnetic field. We calculate the absorption near the ion-ion hybrid resonance in an exact manner by adopting the invariant imbedding method (IIM). When the parallel wave number is very small and the magnetic field is uniform, the ion-ion hybrid resonance depends on the relative concentration of the ion species. We will consider H<sup>+</sup>-He<sup>+</sup> plasma and show the resonant absorption at the ion-ion hybrid resonance. We will discuss roles of ion-ion hybrid resonance in heating ions in solar corona which consists of heavy-ion plasma.