

Abstract Submitted
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Numerical studies of electrostatic eigenmodes in a pair-ion plasma SUWON CHO, Kyonggi University — It has been known that there exist various waves in a pair-ion plasma having ions of equal mass and opposite charge without electrons and that a branch in the intermediate frequency range is a backward wave. The dispersion relation of electrostatic eigenmodes is studied to analysis these experimental results. Including the non-uniform density profile in a bounded plasma, the wave equation is converted to a matrix eigenvalue equation via the finite difference method, which is then solved numerically. The shooting method is also used to confirm the results. Numerical results shows that there can be a backward wave in a bounded plasma, while it is absent in the corresponding infinite plasma. In addition, the eigenmodes in an ordinary electron-ion plasma are examined for comparison.

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