



Coronal ion-cyclotron beam instabilities: a multi-fluid description

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Ion-cyclotron waves have been observed to play an important role in coronal heating and acceleration of the fast solar wind in the open coronal holes. However their coronal origin remains unclear. It has been proposed that beam particles emanating from small-scales reconnection events may provide to the plasma enough free energy for driving micro-instabilities which may in turn constitute a potential source of ion-cyclotron waves. In the frame work of the multi-fluid model, the present work aims to study the possible occurrence of these beam-driven micro-instabilities under typical coronal funnel conditions.