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Beam-generated electrostatic instabilities in two-electron temperature space plasmas

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Abstract content
 (Max 300 words)

Using kinetic theory, beam-generated wave instabilities are investigated in a four-component plasma composed of drifting warm electrons (magnetic field-aligned), hot and cool electrons, and background ions. All species are fully magnetized. A number of instabilities such as the electron acoustic, modified two-stream and electron beam resonant instability are found to be supported. The dependence of the growth rate and real frequency on plasma parameters such as electron beam speed, particle density and temperature, magnetic field strength, wave propagation angle, and temperature anisotropy of the electron beam is examined. It is found that the beam speed is crucial in determining which instability is excited.

Apply to be
 consider for a student
 award (Yes / No)?

Yes

Level for award
(Hons, MSc,
 PhD)?

MSc

Main supervisor (name and email)
and his / her institution

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Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

Yes

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