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Beam-driven slow and fast electron-acoustic solitons in three-electron temperature space plasmas

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Abstract content (Max 300 words) Formatting & Special chars

This study on nonlinear potential structures follows from our study of linear instabilities associated with the slow and fast electron-acoustic waves in a model with stationary cool electrons, warm electrons (drifting parallel to an external ambient magnetic field), stationary hot electrons and stationary ions. All species are treated as adiabatic fluids. The Sagdeev pseudo-potential approach is used to investigate nonlinear structures of arbitrary amplitudes. The soliton existence regions are found to be limited by the number densities of the plasma constituents or by the occurrence of double layers. The study will focus predominantly on the effects of the magnitude of beam speed (of the warm electrons) on the existence regions of solitons.

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

Yes

Level for award (Hons, MSc, PhD, N/A)?

PhD

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

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No

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Yes

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