



Contribution ID: 126

Type: Oral Presentation

Large amplitude slow and fast electron-acoustic solitons and supersolitons in three-electron temperature space plasmas

Wednesday, 1 July 2015 11:30 (20 minutes)

Abstract content
 (Max 300 words)

Arbitrary amplitude slow and fast electron-acoustic solitons are investigated in a four-component unmagnetised plasma model consisting of cool, warm and hot electrons, and ions. In addition to modelling all species as adiabatic fluids, the effect of neglecting inertia and treating the warm and hot electrons, respectively, as Boltzmann distributed and non-thermal species are also examined. The admissible slow and fast electron-acoustic soliton existence regions are obtained by considering both the lower and upper Mach number limits. The possibility of obtaining supersolitons is also investigated.

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

Prof R. Bharuthram (rbharuthram@uwc.ac.za) University of the Western Cape

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

No

Please indicate whether this abstract may be published online (Yes / No)

Yes

Primary author: Mr MBULI, Lifa (SANSa Space Science)

Co-authors: Prof. LAKHINA, Gurbax (Indian Institute of Geomagnetism, India); Prof. BHARUTHRAM, Ramesh (University of the Western Cape); Prof. SINGH, Satyavir (Indian Institute of Geomagnetism, India); Dr MAHARAJ, Shimul (SANSa Space Science)

Presenter: Mr MBULI, Lifa (SANSa Space Science)

Session Classification: Space

Track Classification: Track D2 - Space Science