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## Polarity changes of small-amplitude ion-acoustic and electron-acoustic solitons in multi-fluid space plasmas

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**Abstract content**   
 &nbsp; (Max 300 words)

The properties of ion-acoustic and electron-acoustic solitons are studied for fluid models describing three-component and four-component space plasmas. Each plasma model is composed of one or two (different temperatures but same mass) ion species and one or two (different temperatures) electron species. We use a reductive perturbation method to derive Korteweg- deVries equations that describe small-amplitude solitons for each model. The results are shown to be in good agreement with arbitrary amplitude soliton results available in the literature. A comparison of the results for the different models will provide insight into how polarity changes in the observed soliton structures are related to the plasma composition.

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

No

**Level for award (Hons, MSc, PhD)?**

N/A

**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)?**

No

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