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Session DP1 - Poster Session III.

POSTER session, Monday afternoon, October 23

Exhibit Hall AB, Qu\{e}bec City Convention Centre

[DP1.018] On Four-Field Model for Dispersive Field-Line Resonances

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Recently, a new theoretical model has been proposed for dispersive field-line resonances (FLRs) in magnetospheric plasmas based on reduced four-field equations for low-beta collisionless plasmas. (A. Bhattacharjee, C. A. Kletzing, Z. W. Ma, C. S. Ng, N. F. Otani, and X. Wang, *Geophys. Res. Lett.* 26) 3281 (1999). The model improves upon the predictive capabilities of earlier two-field models. In particular, due to the coupling of the shear-Alfvén mode to the slow mode in the four-field system, it is now possible to account for the observed low frequencies of FLRs. Numerical simulations of the four-field model in a driven system are presented. A new method to calculate the resonant frequency is also discussed. It is shown that resonant structures can indeed be sustained at the observed lower frequencies of FLRs. These results are compared with those of the two-field model.

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