

Abstract Submitted
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Lower-Hybrid Wave Activity, Reconnection and the reactive Weibel Instability ROBERT BINGHAM, Rutherford Appleton Laboratory, LUIS SILVA, GoLP, V.D. SHAPIRO, University of California, PADMA SHUKLA, University of Bochum, RAOUL TRINES, Rutherford Appleton Laboratory — An isolated current sheet unsuitable to the filamentation of the current seeks to lower its energy and converts it into kinetic energy by the attraction of parallel current elements, in collisionless plasmas anomalous resistivity resulting from particle inertia or wave-particle interactions is required for current filamentation leading to the tearing mode instability or reconnection. We demonstrate that lower -hybrid activity can be responsible for anomalous resistivity and the resulting for anomalous diffusion rate driving magnetic reconnect ion. We further demonstrate that the current filamentation may also be associated with the reactive Weibel instability. Applications to laboratory and space plasmas will be presented.

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