



Electron precipitation during plasma sheet BICI structures

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THEMIS multi-point observations at different locations with respect to the neutral sheet have recently indicated signatures of elongated sausage structures around 10 Earth radii downtail. These structures were attributed to the locally operating Ballooning/InterChange Instability (BICI). For a number of THEMIS events with BICI signatures good All-Sky Imager (ASI) observations are available near THEMIS probes footprints. The ASI data reveal rich diffuse and discrete auroral shapes during the events. To understand the complexity of the observed auroral shapes we use high-resolution electromagnetic wave observations during a BICI structure passing by one THEMIS probe. We analytically estimate diffusion coefficients that would be provided by the waves. We find that the electron precipitation rates into the loss cone at the edges of the BICI structure would be sufficient to generate the observed auroral forms. Hence the auroral forms would appear as the ionospheric footprints of the BICI structures in the near-Earth plasma sheet.