Evidence of Radiation Belt Losses through the Magnetopause Boundary

Combined in situ particle measurements from the MMS and Van Allen Probes missions allow us to directly assess how many electrons are being lost from the magnetosphere system. Observations and simulations suggest that the dropouts of radiation belt intensities are linked to escaping energetic electrons observed in the magnetosheath. Along with state-of-the-art simulations from the APL-developed GAMERA framework*, we can actually characterize where, when, and how those particles are lost.

*http://cgs.jhuapl.edu/Models/gamera.php

**a)** Measured & Fitted Electron PSD

$\mu = 750$ MeV/G, $K < 0.1 \ G^{1/2} R_E$