
PEM021-P12

Room: Convention Hall

Time: May 24 17:15-18:45

Pi2 modulation of aurora activities and ground-satellite magnetometer data by a periodic passage of plasma flows

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The Pi2 periods observed in injection fluxes, aurora activities, BBF amplitudes, and AKR intensity, from the Earth's surface to the magnetotail, have been considered as the fundamental time-constant of the magnetosphere.

From a study of aurora expansion events of 24 January 1986 observed at central Canada, we suggest that periodic injection and associated plasma flows bifurcated at the midnight sector created these time-constants in the magnetosphere.

Keywords: Pi2, Aurora expansion, particle injection, high velocity plasma flow, Pi2 periodicity, ground-satellite observation