

Substorm Pi2 pulsations: Polarization patterns caused by azimuthal propagation of ionospheric loop currents

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The map of polarizations of high latitude Pi2 in Samson and Harrold (1983) presented patterns of the ellipticity and major axis orientations in the horizontal plane, covering from auroral zone to mid-latitude over the nighttime sector spanning 5.3 MLT. The substorm processes caused complexities in the polarization map of Pi2 pulsations.

We show that the polarization map of Samson and Harrold (1983) at first seem impossible will explain the Pi2 pulsations in simple way. These ground polarization patterns convey much information on the energy source of Pi2 pulsations and mode of oscillations in the magnetosphere.

References:

Samson, J.C., and B. G. Harrold (1983), Maps of the polarizations of high latitude Pi2s, *J.Geophys.Res.*, 88, 5736-5744.

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