

Multiscale Coupling of Sub-auroral Polarization Streams

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Sub-Auroral Polarization Streams (SAPS) are fast westward flows slightly equatorward of the auroral precipitation boundary, and manifestations of magnetosphere-coupling processes. Recently it was shown that SAPS sometimes contain perturbation in westward speed, typically with temporal scale of a few minutes (e.g., Hori et al., GRL, 2018). However, it has not yet been clear how small the temporal scales of these perturbations can be and how perturbations with different temporal scales are related to each other. In this paper, multiscale coupling of the sub-auroral polarization streams will be studied, using multiple events observed mainly by the SuperDARN Hokkaido East / West radars.

Keywords: multiscale coupling, SuperDARN Hokkaido East / West radars, sub-auroral polarization stream (SAPS)