

Drifting cusp auroral spot associated with reverse convection

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We examined features of "drifting cusp auroral spot" by using observations of an auroral form from an all-sky imager at Longyearbyen, Svalbard, and in situ observations of the precipitating particles and plasma flow from DMSP spacecraft that flew over the aurora. Drifting cusp auroral spot means an auroral form that moves to both high and low latitudes during its lifetime. Our result shows that the poleward motion of the drifting cusp auroral spot is associated with sunward plasma flow, i.e., reverse convection. This appears to be inconsistent with a general view of the poleward-moving auroral form. We discuss this seemingly-contradictory motion in terms of lobe reconnection.

Keywords: aurora, cusp, polar cap, plasma convection, reconnection