

## Auroral vortex, auroral surge, and vortical current in the ionosphere associated with the Pi2 pulsations

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The auroral breakup event occurred at 0500UT 27 January 1986 in central Canada is studied using all-sky video image from two optical stations (GWR and SHM) and magnetometer data from three ground stations including the optical stations.

The spatiotemporal motion of the ionospheric vortical current explained the ground magnetometer data in the auroral zone. During the activation of the current vortex, auroras composed of the shear layers rotating clockwise and the auroral surge propagating westward were observed.

It is found that the auroral surge first appeared at the onset latitudes propagated poleward passing through the auroral vortex and became the poleward boundary aurora-surge (PBAS)(1).

### References

1. Saka, O., K. Hayashi, D. Koga (2012), JASTP.

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