

Interaction between background flow and local winds associated with auroral activities in the polar thermosphere (2)

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Thermospheric dynamics in the auroral region are extremely complicated. The observed winds in the vicinity of an auroral arc are not always explained by heating or ion drag processes alone. Our previous studies strongly suggest that local heating processes in the auroral region have significant influences on the large-scale thermospheric dynamics. However, it is still not clear how the local thermospheric wind interacts with the global background flow. A two-dimensional high-resolution nonhydrostatic thermospheric model is used to investigate the interaction between local winds and large-scale background flow in the polar thermosphere.