

## Studies on the coupling process of ionospheric and magnetospheric convection

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In this paper, we discuss about the coupling process between ionospheric convection and magnetospheric convection. It was widely recognized that the ionospheric and magnetospheric convections are closely tied each other through the magnetic flux tube. On the other hand, ionospheric potential has been calculated through the condition of field aligned current (FAC) closure via the ionospheric divergent current. This calculated potential spread out to low-and middle latitudinal regions form source FAC region. One may have a question that this spread ionospheric potential also means spread magnetospheric convection?. To answer this question, we resolve some ambiguities in the context of FAC closure to the Earth's systems including with ionosphere, atmosphere and solid-Earth electromagnetic coupled responses.