

SCに伴うオーロラのシミュレーション研究

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MHD simulation of the auroras associated with the Sudden Commencement

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There are many SC studies concentrated on the magnetospheric and ionospheric disturbances associated with the preliminary impulse and the main impulse. These disturbances appear in the latitudes in and lower to the auroral oval. On the other hand, the FAC also exhibits peculiar enhancement in the cusp region. This FAC probably relates to the shock auroras [Zhou and Tsurutani, 1999; Zhou et al., 2003; Liu et al., 2011]. There are few simulation studies about the FAC in the cusp region at the SC [Samsonov et al., 2010]. However, detailed studies about energy conversion in the dynamo region of the FAC and nature of the plasma disturbances are not done yet. In the talk, we will present the topics about the shock auroras obtained by the global MHD simulation. We will also explain how the FAC is generated in the dynamo region, and what is the role of the reconnection in the dayside magnetopause.

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