

The role of Hall magnetic field in large-scale magnetic reconnection dynamics and structure

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A Hall magnetic field of magnetic reconnection is generated by the electron-ion dynamics in the diffusion region. There are many studies on the effect of the Hall magnetic field for the reconnection rate around the diffusion region. However, in this study, we investigate the roles of the Hall magnetic in the dynamics and structures of reconnection jets and plasma sheet boundary layers, along which the Hall magnetic field propagate away from the diffusion region in large-scale magnetic reconnection systems. That makes it possible to discuss the Hall magnetic field strength generated in various conditions of magnetic reconnection.

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