

## Studies on current closure near the Mercury surface

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Past missions to Mercury have revealed that Mercury has a magnetosphere similar type to the Earth's magnetosphere. The planned corroboration mission of ESA and ISAS would encourage a comparative study between Mercury's magnetosphere and the Earth's magnetosphere. In this paper we focus on how electric currents in Mercury's magnetosphere close near the Mercury's surface, which is very important in the redistribution process of energy and momentum of magnetospheric plasma. Some peculiarities of Mercury's magnetospheric plasma environment suggest that the mechanism of current closure in Mercury's magnetosphere is very different from that in the Earth's magnetosphere.