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PEM026-P02

Room:Convention Hall

Time:May 25 10:30-13:00

Vlasov simulation of the interaction between the solar wind and a dielectric body with magnetic anomaly

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The interaction of a plasma flow with an unmagnetized object is quite different from that with a magnetized object such as the Earth. Due to the absence of the global magnetic field, the unmagnetized object absorbs plasma particles which reach the surface, generating a plasma cavity called "wake" in the anti-solar side of the object. Since the velocity of the solar wind (SW) is larger than the thermal velocity of ions, ions cannot penetrate into the nightside of the moon. However, the ions were observed in the deep wake by a Japanese spacecraft SELENE (KAGUYA) which is orbiting the moon in a polar orbit around 100km altitude. A key mechanism of this phenomenon is thought to be scattering of SW ions at the lunar dayside surface by a magnetic anomaly. In the present study, we examine the orbit of SW ions scattered by the magnetic anomaly at the moon via a full-kinetic Vlasov simulation.