ウェイク形成に対するイオンジャイロ運動の効果

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Effect of ion cyclotron motion on the formation of wakes

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Global structure of wake field behind an unmagnetized object in the solar wind is studied by means of a 2.5-dimensional full electromagnetic Vlasov simulation. 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 on the anti-solar side of the object. For numerical simulations of electromagnetic structures around the wake, it is important to include the charging effect in global-scale simulations. It is confirmed that spatial structures of wake fields are affected by the direction of ion cyclotron motion.