

Electron-scale microscopic instabilities at a low-mach-number perpendicular collisionless shock

Masahiro Yamao[1]; Takayuki Umeda[1]; Ryo Yamazaki[2]

[1] STEL, Nagoya Univ.; [2] none

A full particle simulation study is carried out on the electron acceleration at a collisionless, relatively low Alfvén Mach number ($M_A=5$), perpendicular shock. Recent self-consistent hybrid shock simulations have demonstrated that the shock front of perpendicular shocks has a dynamic rippled character along the shock surface of low-Mach-number perpendicular shocks. In this paper, the effect of the rippling of perpendicular shocks on the electron acceleration is examined by means of large-scale (ion-scale) two-dimensional full particle simulations with a shock-rest-frame model.