WAVE ACTIVITY IN THE FOOT REGION OF A QUASI-PERPENDICULAR SHOCK: 3-D PIC SIMULATION RESULTS

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Abstract

We have carried out a 3-D full particle simulation of a quasi-perpendicular shock. The full mass ratio M/m=1840 was taken for this simulation, and almost one ion inertia length square was set for the plane perpendicular to the upstream flow. Complicated wave activity is found in the shock transition region, and comparing with lower dimensional simulations with the same parameters, strong electromagnetic wave activity is found at the most frontier of the shock foot only in the 3-D result. We will discuss the observed 3-D nature of wave activity in the shock transition region.

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