

Computer simulations on microscopic processes around the Bow shock

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The plasma wave receiver onboard Geotail spacecraft revealed that the plasma waves observed around the Bow shock region are closely related to electron dynamics and that they are the results of the nonlinear processes. In order to analyze the detailed microscopic processes around the Bow shock region, we conducted computer simulations using our full particle simulation code. Our computer simulations succeeded in reproducing the static shock potentials at the transition region and various microscopic plasma processes, which result in the plasma wave generations.