

## Vlasov code simulation of contact discontinuities

# Takayuki Umeda[1]; Naru Tsujine[2]; Yasuhiro Nariyuki[3]

[1] ISEE, Nagoya Univ.; [2] University of Toyama; [3] Faculty of Human Development, Univ. Toyama

The stability of contact discontinuities formed by the relaxation of two Maxwellian plasmas with different number density but the same plasma thermal pressure is studied by means of a one-dimensional electrostatic full Vlasov simulation. Our simulation runs with various combination of the ion-to-electron ratio of the high-density and low-density regions showed that transition layers of density and temperature without jump in the plasma thermal pressure are obtained when the electron temperatures in the high-density and low-density regions are almost equal to each other. However, the stable structure of the contact discontinuity with a sharp transition layer on the Debye scale is not maintained. It is suggested that non-Maxwellian velocity distributions are necessary for the stable structure of contact discontinuities.