

R008-01

Zoom meeting D : 11/3 AM2 (10:45-12:30)

10:45~11:00

Application of CoToCoA to MHD and micro-scale simulations of the magnetosphere

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CoToCoA (Code to Code Adapter) is the cross-reference framework for macro- and micro-scale numerical codes and is developed by MPI library in the current version (1.1.0). CoToCoA framework can make the data generated by the different simulation codes transferred between those simulation codes easily. The main concepts of CoToCoA are that we do not add modifications to the simulation codes as possible without data transfer and we do not need to know the referred simulation code without data format. These concepts allow for many simulation codes to participate in this framework.

In the Solar-Terrestrial and Planetary study, there are many simulation codes due to the differences of physical scales and numerical calculation methods. To couple these simulation codes is hard since the deeply understanding and much knowledge of codes are required. Considering this situation, CoToCoA seems to be the best way to overcome the difficulty.

In this study, we will show the application of CoToCoA framework to couple the MHD simulation code with microsimulation codes. In particular, we focus on coupling MHD simulation with electro-hybrid and test-particle simulations. The implementations of these coupling using CoToCoA are also shown as the easy implementation is the advantage of CoToCoA.