Open simulation data system for Jovian magnetospheric research

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Recently there are a lot of good Jovian observation data by HIASAKI. On the other hand, thanks to the development of computer system, we can perform the parameter survey simulation of Jovian magnetosphere (which is not so high spatial resolution). Thus it is good time to collaborate the simulation with observation in Jovian magnetospheric research and we have started to create the simulation database of Jovian magnetosphere. In this simulation database we store the basic configuration of magnetosphere under the several constant solar wind dynamic pressures and IMFs, and realistic solar wind conditions from the modeling and observation. Additionally, we will also run the simulation with the specific solar wind condition for the experimental data. Now the simulation data is stored in our own server system. The basic simulation data size is 3 GB and the variation of solar wind condition is a few hundred then it is expected that the total data size will be ~100 TB including the calculation of quasi-steady state of magnetosphere. We also plan to add the high spatial resolution simulation to the database, then the total data size will become around 1 PB. It is important to create the environment of analyzing these data. We now plan to use the NICT Science Cloud or cloud (hosting) computer resources of supercomputer center of university. In this presentation we will show the simulation database of Jovian magnetosphere and discuss how to create and maintain it.

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