

## Development of real-time prediction system of CME arrival and magnetic field with SUSANOO-CME MHD simulation

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The predictions of CME arrival to the Earth and the southward magnetic field brought by the CMEs are one of crucial tasks for space weather forecast.

We have developed an MHD simulation capable of reproducing the interplanetary propagation of multiple CMEs with internal magnetic flux rope (Shiota & Kataoka 2016) called as SUSANOO-CME. The simulation solves propagation of solar wind and CMEs in the inner heliosphere from 25 solar radii where all the bulk flow exceeds fast mode speed. The information of solar wind and CME is specified at the inner boundary with empirical and analytical models using real-time observations of the Sun and the corona.

Recently, we have been constructing a new prediction system of CME impacts (CME arrival and magnetic field) utilizing SUSANOO-CME with the real-time solar observations for the purpose of use in space weather forecast in NICT. The system is capable of performing ensemble simulation with different sets of multiple CME input parameters, which is controlled from web-browser based interfaces. The results of ensemble simulation can be evaluated with real-time IPS observation in Nagoya University (the detail is reported by Iwai et al. submitted in this session). We will report the current status of the development and discuss the future directions.

Keywords: Space weather forecast, CME, solar wind