

Future Magnetospheric Mission 1: Technical Requirements for a `Black Box' Probe in Space Plasma

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Recent developments of observational and theoretical studies on the Earth's magnetosphere have given us quite a bit of statistical and phenomenological knowledge of interaction between the solar wind and the Earth. On the other hand, some fundamental issues such as dynamical responses of the system to solar wind disturbances are far from fully understood. For essential understanding, energy and mass transfer mechanisms of multi-component plasma in key regions where inter-scale couplings between electron, ion and MHD phenomena are taking place. In order to step into this black box in space plasma, actualization of new technical requirements are indispensable. In this presentation, we would like to stimulate discussion on the technical needs for the future geomagnetospheric mission and necessary spacecraft specifications.