The SCOPE Mission

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In order to open the new horizon of research in the space plasma physics, formation flying spacecraft of SCOPE will perform simultaneous multi-scale in-situ observations of space plasma dynamics in the earth's magnetosphere. In SCOPE, we will combine the observations by mother-daughter spacecraft pair resolving the electron scale dynamics with monitoring by the three daughter spacecraft formation of the surrounding ion/MHD-scale dynamics. This will enable us to inspect from the cross-scale coupling point of view how the key space plasma processes develop, and that, with hands-on-data basis. Key physical processes to be studied are shocks, magnetic reconnection, and turbulence. The SCOPE mission made up of the five spacecraft will be put into the equatorial orbit with the apogee at 30Re (Re: earth radius), making the spacecraft formation to fly through the regions in the near-earth space that host the plasma processes of fundamental importance. There is lively on-going discussion on the

fully world-wide international collaboration, which would certainly make the coverage over the scales of interest much better and thus make the mission success to be attained at an even higher level. The common goal here is not only to understand the near-earth space deeper but also to make substantial contribution to our understanding of the Plasma Universe.