

## Three-Dimensional Global MHD Simulation of Plasma Instability in Magnetospheric Boundary Layers

# Kazuhiro Ito[1]; Tatsuki Ogino[2]

[1] STEL, Nagoya Univ; [2] STEL, Nagoya Univ.

<http://center.stelab.nagoya-u.ac.jp/kenkyusitu/kenkyusitu.html>

A high-resolution 3D global MHD simulation of the solar wind and earth's magnetosphere interaction is conducted. By higher resolution global simulation, plasma instabilities in magnetospheric boundary layers were come out. For southward IMF (Interplanetary Magnetic Field), wavy structure appears at the dayside magnetopause, on the other hand, filamentary structure is formed in the plasma sheet due to patchy and intermittent reconnection. Moreover, for northward IMF, vortices generated by Kelvin-Helmholtz instability were rolled up at the dayside magnetopause in the low latitude boundary layer.