Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

PEM26-P17 Room:Convention Hall Time:May 22 10:45-12:15

Response of earth's magnetosphere to IMF rotation

IWADACHI, Atsushi[1*]

[1]Solar-Terrestrial Environment Laboratory

I examined response of earth's magnetosphere to IMF rotation by using high-resulution MHD simulation with fine grid, and focus on relation between current and vorticity.The simulation model adopts a half model by assuming a morning-evening symmetry. The grid point is (nx,ny,nz)=(900,400,800), except on both boundary points. The grid interval is dx=dy=dz=0.1Re. This interval can caluculate vorticity grow by Kelvin-Helmholtz instability.The solar wind density is 10/cc, velocity is 300km/s, and temperature is 20000K. I examine response of earth's magnetosphere to IMF rotation by divideing current and vorticity between parallel and perpendicular component to magnetforce, and clarify effect on By component to magnetosphere in case that IMF rotates one degree by one minute.

Keywords: MHD, simulation, Magnetic reconnection, Kelvin-Helmholtz, current, vorticity