

## Global model calculation of magnetic impulse events 2

# Ryuho Kataoka[1], Hiroshi Fukunishi[2], Hitoshi Fujiwara[3], Louis J. Lanzerotti[4]

[1] Dep. of Geophysics, Tohoku Univ., [2] Department of Geophysics, Tohoku Univ., [3] Graduate School of Science, Tohoku University, [4] Bell Labs.

<http://pat.geophys.tohoku.ac.jp/~ryuho/>

There has been no consensus on the generation mechanisms of magnetic impulse events (MIEs) so far and the relationship between the magnetic signatures on the ground and in the magnetosphere has not been investigated quantitatively. Here we have performed a model calculation for reproducing the global distributions of magnetic disturbances due to large-amplitude MIEs. The global ionospheric sheet currents have been calculated by assuming height-integrated ionospheric conductivity and field-aligned currents using current continuity equation. By comparing the model calculation with the data obtained by GOES satellite magnetometers, SuperDARN HF radars, and ground magnetometers, we will discuss the current systems of MIEs. Further, differences in magnetic disturbances due to MIEs and Sudden Impulses will be examined quantitatively.