[포SO-19] Isothermal full magnetohydrodynamic simulations for nonlinear field line resonances.

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Field line resonances (FLR) allow us to understand many features of ULF oscillations in the magnetosphere. We will perform numerical simulations of FLR with a three-dimensional isothermal full MHD simulation code, which adopts the total variation diminishing(TVD) scheme. When the source perturbation is strongly impulsive and thus the timescale of the initial variations is sufficiently smaller than the convection timescale, it is shown that FLRs are excited in these full MHD simulations. When the disturbance is sufficiently small, we found that linear properties of MHD wave coupling are reproduced. In order to examine nonlinear nature of FLR, wave spectra, Poynting flux and energy distribution are studied at resonances as the magnitude of initial disturbance gradually increases.