

M15b フレアの進化における縦磁場の働き

真柄哲也（京大宇宙物理）、柴田一成、横山央明（国立天文台）

One of the observational results of Yohkoh is a plasmoid eruption in flare (e.g. Shibata et al., 1995). This is a key factor when one studies the evolution of flare. In order to understand the dynamics of plasmoid, we performed the numerical MHD simulation and investigated the evolution of the system of coronal magnetic fields, which is initially set to be a linear force-free configuration. The main results are as follows. At first stage, small dissipation of magnetic energy induced by the initial perturbation occurs in the current sheet where a plasmoid is formed and slowly going upward. The crucial point comes after the perpendicular magnetic fields (B_y) are expelled a way from the reconnection point, when the reconnection proceeds efficiently and the plasmoid is rapidly erupted upward. These are consistent with the observational results that the plasmoid slowly rises before the main energy release and it is rapidly accelerated upward when the flare sets in. In this paper, we emphasize the role of the perpendicular magnetic fields in the evolution of flare.