M24b The structure and evolution of magnetic fields surrounding a filament on the Sun

○真柄哲也（京大理）

It has been suggested that a filament (or prominence) is a phenomenon in which plasma is rested on magnetic fields with a dipped configuration in the corona. These magnetic fields originally come from the subsurface layer by magnetic buoyancy, and the dynamic formation of the dipped configuration has been studied using numerical simulations of flux emergence (e.g. Magara & Longcope 2003). Since the detailed structure of a filament was obtained using high-resolution observations, the nature of such a fine structure as barbs (filament feet) has been studied (Martin & McAllister 1996; Aulanier et al. 1998). In this study we have used the 3-dimensional flux-emergence simulation to investigate the dynamic formation of the fine structure, especially focusing on the configuration of magnetic fields supporting material in barbs. Emerging fields with a multi-lobe configuration produce the photospheric-field distribution that has the main polarity regions surrounded by satellite polarity regions. We discuss the origin of the satellite polarity regions in terms of the emergence of twisted magnetic fields.