

**B27b Study of causal relation between the evolution of magnetic non-potentiality in sunspot regions and occurrence of solar eruptive events**

Jinping Dun, Hiroki Kurokawa, and Takako T. Ishii (京大理)

We propose observational program for SOT and EIS aboard Solar-B, focusing on the causal relation between the changes of magnetic non-potentiality in sunspot regions and occurrence of solar eruptive events. To analyze the non-potentiality evolution and their association with large X-class flares (X10 and X17) of NOAA AR 10486, we studied the evolutional changes of magnetic non-potentiality by calculating the temporal evolution of magnetic shear angle, current density and current helicity density along the neutral line near the flare kernels by using the vector magnetograms obtained with SMFT (Solar Magnetic Field Telescope) at HSOS (Huairou Solar Observation Station). Our results shows that the magnetic non-potentiality increased near the flare kernel regions from two days before the flare.

But with ground based observations, the spatial resolution is low (about 1.5 arcsec for SMFT) and the precise temporal variation of the vector magnetic field is difficult to be measured due to the changing seeing conditions. So we do not know what really happened in the above mentioned regions when the events occurred. Higher temporal and spatial resolution observation of vector magnetic field is needed to clarify the relationship between the evolution of magnetic non-potentiality and the trigger mechanism for eruptive events.