

Survey of quiescent filament channels at the current solar minimum

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Abstract. We present preliminary analysis on observations of filament channels by Hinode/XRT and STEREO/EUVI. The corresponding H-alpha filament information is provided by KSO and MLSO. The magnetic field information is provided by SOHO/MDI and SOLIS. We study the correlation between filament channels on the disk and cavities above the limb as well as the X-ray and EUV structures and the evolution of filament channels. We first select 10 low- and mid-latitude filament channels located in active region remnants observed during November 2006 and December 2008. These channels can be divided into 5 groups, and the same channel at different solar rotations is classified into one group. Corresponding cavities are found for only five filament channels. We find that the emission on the two sides of the filament channels is asymmetric in both X-rays and EUV. One side has curved bright features while the other side has straight faint features. Our interpretation is that the magnetic configuration is also asymmetric along the length of the channel. The field lines in one polarity turn into the flux rope, while the field lines from the other polarity are open or connected to very distant sources. A more detailed analysis on this asymmetric structure will be carried out. We also extend this study to the polar crown filament channels observed at the present solar minimum.