

[7SE-11] A BRIGHT RIM OF SOLAR FILAMENT OBSERVED BY USING FISS

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Bright rims are one of the most unknown part of a filament nowadays. Many models tried to explain the environments, but there is no commonly acceptable model. Many survey observations have been performed to find various characteristics of the bright rim statistically, but there was only one spectroscopic observation to understand phenomena of the bright rim.

We observed a bright rim on June 25, 2010 using FISS installed in NST, Big Bear Solar observatory. FISS can obtain a couple of wavebands data simultaneously with short time cadence and fine resolution($\sim 0.1''$, expected) with Adaptive Optics.

By applying the cloud model, we found source function, optical thickness, temperature and non-thermal velocity of the region from the spectra of Ha and CaII 8542 lines.

We discuss the physical implication of these measurements on the nature of bright rims of filaments.

[7SE-12] Structures of a Solar Filament Observed with FISS on 2010 July 29

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In general, solar filaments are divided into two parts; one spine and several barbs. Barbs are seen as if they protrudes from the spine. Until now there are many controversies about the structures of a barb and spine. Recently, New Solar Telescope was installed at Big Bear Solar Observatory. Its clear aperture is about 1.6m and it is the largest telescope among ground-based solar telescopes. Fast Imaging Solar Spectrograph (FISS) developed by SNU and KASI was also installed in a vertical optical table in Coude room of the 1.6m NST. It is simultaneously able to record two lines; Ha and Ca II 8542A lines. On 2010 July 29, we observed a portion of a solar filament located in northern hemisphere with FISS and it had a well-developed barb. And we also observed a portion of a spine. In order to analyze the data, we used the cloud model and obtained physical quantities of the solar filament. Temperature of the solar filament ranged between 4500K and 12000K and non-thermal velocity ranged between 3km/s and 6.5km/s. By comparing physical quantities of a barb and spine, we try to understand these structures of the solar filament.