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The imaging evidence of low-energy cutoff and the status of spectral cross-calibration of HXI

In this talk, I will show the method to confirm the existence of the nonthermal component down to 6.5 keV in the observed X-ray spectrum of a microflare first reported by Glesener et al., 2020. We report the first imaging evidence for low-energy cutoff of energetic electrons in EM maps of >10 MK plasma, which first appeared as two coronal sources significantly above the chromospheric footpoints. This study reveals the important role of electron thermalization and low-energy cutoffs in the physical processes of microflares. The other topic is about the spectral cross-calibration of HXI onboard ASO-S. Cross calibration of different X-ray instruments is essential for solar X-ray joint studies and is particularly important for studies of X-ray directivity and 3-dimensional properties of HXR sources. I will present the preliminary results of the detector spectral calibrations of ASO-S/HXI by investigating its three total flux detectors, and cross-calibrations using SolO/STIX, Fermi/GBM, and Konus-Wind data. Although it is challenging to perform joint observation studies due to several factors, the close fit of the X-ray observations from different instruments still indicates a favorable perspective for joint studies.

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