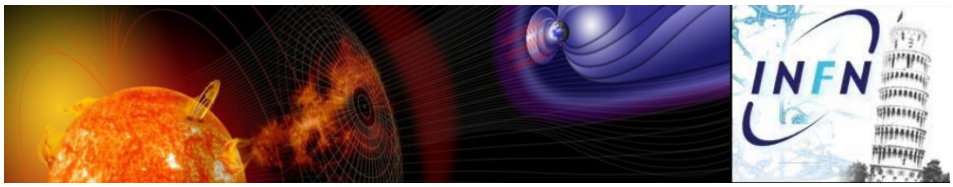

Contribution ID: **42** Type: **not specified**

A new database for flare activities and coronal structures

Thursday, 8 July 2021 17:00 (35 minutes)

We present a new database of both quiet and eruptive corona over a full solar cycle (2010-2021). Using the multi-narrow-band EUV images observed by SDO/AIA, we developed two data mining methods. (1) a new code (RFD) for automatic detection of flares from AIA 94 images. The database includes a more complete list of flares and provides us with essential info for both statistical studies and case studies of flares. In particular, the flaring activities detected in quiet regions may reveal new clues for solving the coronal heating problem. (2) an improved sparse method for differential emission measure (DEM) calculations of full corona. This is used to obtain the long-term evolution of the (EM-weighted) temperature maps of both quiet and eruptive corona. The resulted dataset allows us to quantitatively study the multi-thermal nature of corona and long-term evolution of large-scale structures.
I will also briefly report on the recent progress of the Hard X-ray Imager (HXI payload) onboard the ASO-S.

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