



Contribution ID: 463

Type: Poster

The energy partition in solar flares: current state, new observations, and new models

Monday, 6 September 2021 11:11 (13 minutes)

Solar eruptive events entail a complex interplay of energy release, transport, and conversion processes. A quantitative characterization of the different forms of energy therefore represents a crucial observational constraint for models of solar eruptions in general, as well as for magnetic reconnection, heating, and particle-acceleration processes in particular. These constraints are derived from X-ray, EUV and bolometric observations. We first review the results of recent statistical studies, focusing on possible explanations for apparent discrepancies between the different studies. We then present some of the first results on energy partition obtained with the novel STIX X-ray spectrometer/imager on Solar Orbiter. Finally, we present the first upper limits on energy input by nonthermal electrons given by the warm-target model.

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Session Classification: Poster Session 1.5

Track Classification: Session 4 - From Radio to Gamma Rays: Near-Sun Manifestations and Triggering of Solar Flares and Coronal Mass Ejections