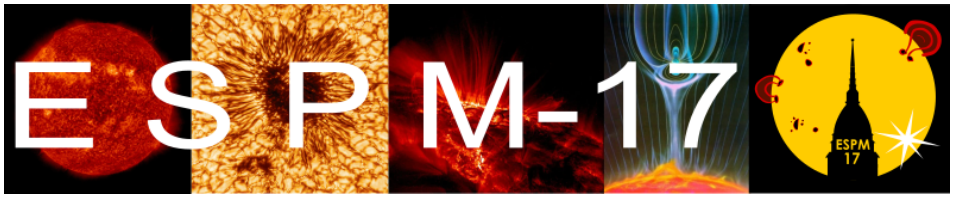

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Disentangling coronal hard X-ray emission from the total signal through stereoscopic observations with Solar Orbiter/STIX and FERMI/GBM

In this work we take advantage of the unique orbit of the Solar Orbiter spacecraft which enables us to study flares from multi-viewpoints away from the Sun-Earth line. A dataset of flares for which the chromospheric footpoint emission is occulted from Solar Orbiter's point of view and the total flare emission is observed by Earth based observatories (i.e. Fermi/GBM) are identified. This allows the study of coronal hard X-ray emission separately to the total integrated signal in hard X-ray for a given flare. Coronal emission is typically much fainter and thus often challenging to disentangle from the total integrated flux with current hard X-ray instrumentation, due to the limited dynamic range of indirect imaging techniques. The study of the "above the loop-top"source allows us to probe the physics of what is commonly thought to be the acceleration region in flares and to advance our current understanding of particle acceleration. In this on-going investigation the relative flux of non-thermal emission in the corona versus footpoint emission is quantified. This constraint is important as it provides guidance for the required dynamic range of the next generation of hard X-ray instruments. In addition, the time evolution of coronal and footpoint emission is compared in order to investigate whether the purely coronal source shows the same pulsations as the footpoint sources. This analysis will help us better understand quasi-periodic pulsations in flare emission.

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Session Classification: Coffee break and poster session 2

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