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Energetic electron transport processes in solar flares

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Solar flares are efficient particle accelerators and prime laboratories for studying astrophysical acceleration and transport processes. Our understanding of electron acceleration and transport in flares has been enhanced by observationally-driven kinetic modelling and multi-wavelength observations from X-rays to (E)UV to radio. However, many questions remain about how and where energetic electrons are accelerated, and how different plasma environments (e.g., collisions, turbulence) affect their transport and importantly, our interpretation of their accelerated properties from observation. In this talk, I will review electron transport processes in the flaring corona. Moreover, I will discuss how transport modelling will help to constrain the electron angular distribution from upcoming joint observations with Solar Orbiter/STIX and X-ray missions at Earth. Finally, I will briefly discuss how the properties of the acceleration region might be constrained by combining observations and modelling of flare energetic electrons transported at the Sun and in the heliosphere.

Primary author: JEFFREY, Natasha (Northumbria University)

Presenter: JEFFREY, Natasha (Northumbria University)

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