



Contribution ID: 363

Type: **Invited talk**

## Magnetic Reconnection on the Sun (ESPD Senior Prize Lecture)

*Friday, 10 September 2021 10:15 (20 minutes)*

Magnetic reconnection is a fundamental process for changing the magnetic topology and converting magnetic energy into other forms on the Sun, such as heat, flow energy and fast particle energy. In two dimensions it is fairly well understood, although some aspects still need to be developed. In three dimensions, it behaves very differently and a substantial body of theory and numerical experiment has now been built up, including reconnection at null points, separators and quasi-separators.

Some aspects of solar flares can be understood with 2D reconnection models, but other aspects such as the shapes of flare ribbons, the acceleration of particles and the creation of twist in erupting flux ropes need a 3D understanding. A paradigm shift in our understanding of coronal heating by reconnection has been stimulated by dramatic new observations of photospheric flux cancellation from SUNRISE and from SST together with the realisation that it may well be driving nanoflare heating events and possibly campfires.

**Student poster?**

**Do you want to be considered for a student poster prize?**

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**Session Classification:** Plenary 8

**Track Classification:** Session 3 - Fundamental Plasma Processes in the Solar Atmosphere: Magnetic Reconnection, Waves, Emission, Particle Acceleration