

# 3D structure of the flare chromosphere

**RAS specialist discussion meeting** - 10:00 – 16:05, December 10 (UK time)

Organisers: David Kuridze (Aberystwyth University)  
Hugh Hudson (UCB and University of Glasgow)  
Lyndsay Fletcher (University of Glasgow)

Morning session (10:00 – 13:03)

10:00 - 10:05 **Welcome**

10:05 - 10:30 Invited talk by **Mihalis Mathioudakis, Queen's University Belfast**  
*The diagnostic potential of asymmetric flare line profiles*

10:30 - 10:45 **Chris Osborne, University of Glasgow**  
*Modelling of the Radiative Effects of Flare Energy on Adjacent Chromosphere*

10:45 - 11:00 **Shaun McLaughlin, Queen's University Belfast**  
*Radiative Hydrodynamic Modelling of The Lyman Continuum During Solar Flares*

11:00 - 11:15 **Petr Heinzel, Czech Academy of Sciences and University of Wroclaw**  
*Off-limb observations and analysis of cool flare loops*

11:15 - 11:30 **Sargam Mulay, University of Glasgow**  
*Evidence of chromospheric molecular hydrogen emission in a solar flare observed by the IRIS satellite*

11:30 - 11:45 **COFFEE BREAK**

11:45 - 12:00 **Paulo Simões, Mackenzie Presbyterian University**  
*Vertical structure of flare ribbons from AIA 1600 and 1700 Å images*

12:00 - 12:15 **Brandon Panos, The University of Geneva**  
*Spectral characteristics of flare ribbons using machine learning*

12:15 - 12:30 **Aaron Monson, Queen's University Belfast**  
*Solar Flare-Induced Photospheric Velocity Diagnostics and Stellar Applications*

12:30 - 12:45 **Julius Koza, Tatranska Lomnica**  
*Spectral Diagnostics of Cool Flare Loops Observed by the SST*

12:45 - 13:00 **POSTERS (3 minutes each)**

1. **Hugh Hudson, UC Berkeley / U of Glasgow**  
*IR and mm-wave observations of flare footpoints*
2. **Marianna Korsos, Aberystwyth University**  
*Different atmospheric oscillatory behaviour of the magnetic helicity fluxes in flaring and non-flaring Ars*

3. **Aabha Monga, Aryabhata Research Institute**  
*Investigation of solar photospheric magnetic parameters contributing to the post-flare Rotation*
4. **Jonas Zbinden, Université de Genève**  
*Preprocessing solar spectra with a variational autoencoder to obtain the optimal dataset for solar flare prediction*
5. **Alex Pietrow, Stockholm university**  
*Physical properties of a Fan-Shaped jet backlit by an X9.3 flare*

13:00 - 13:45 **LUNCH (networking/virtual meet up poster viewing through WonderMe platform)**

Afternoon session (13:45 – 16:05)

- 13:45 - 14:10 Invited talk by **Jiong Qiu, Montana State University**  
*Fine-scale Structure and Dynamics of Flare Ribbons in the Lower Atmosphere*
- 14:10 - 14:25 **Jaroslav Dudík, Czech Academy of Sciences, Ondrejov**  
*Saddle-shaped solar flare arcades: A previously unnoticed 3D property*
- 14:25 - 14:40 **Christoph Kuckein, Instituto de Astrofísica de Canarias**  
*Deciphering an M3.2 flare using multiwavelength observations*
- 14:40 - 14:55 **Alberto Sainz Dalda, Bay Area Environmental Research Institute**  
*Better-constrained thermodynamics of a flare in the chromosphere as a consequence of fitting its challenging spectra*
- 14:55 - 15:10 **COFFEE BREAK**
- 15:10 - 15:35 Invited talk by **Adam Kowalski, National Solar Observatory**  
*Spectroscopic Signatures of Explosive Phenomena in the 3D Flaring Chromosphere (from Particles to Pixels to Point Sources)*
- 15:35 - 15:50 **Juraj Lorincik, Bay Area Environmental Research Institute**  
*Slipping flare kernels and the behavior of blue- and red-shifts of TR and chromospheric lines*
- 15:50 - 16:05 **Tetsu Anan, National Solar Observatory**  
*Structure of the flare chromosphere investigated with magnetic field measurements*
- 16:05 **END**