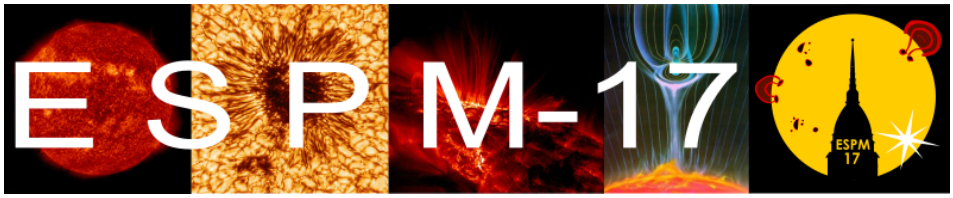

Contribution ID: **196** Type: **Poster**

Denoising Helioseismic Far-Side Images with Spatial and Temporal filters

Helioseismology can detect active regions on the Sun's far side days before they rotate to the Earth's side, using solar acoustic oscillations. These far-side maps provide an important input for space weather models. Recent advances in theoretical and computational helioseismology have improved far-side imaging, which enables high-confidence detection and daily tracking of medium-size active regions. However, these images still suffer from substantial noise due to the stochastic nature of the oscillations. In practice, temporal averaging and Gaussian smoothing have been used to reduce the noise level. These approaches indeed improved the signal-to-noise ratio, yet, the duration for temporal averaging and width for Gaussian filters are chosen based on experience, which are far from optimal. Our study aims to denoise these images by implementing spatial and temporal filters in spectral space to mitigate this noise.

Primary author: RAWAT, Aarushi (Max Planck Institute for Solar System Research)

Co-authors: Dr YANG, Dan (Max Planck Institute for Solar System Research); Prof. GIZON, Laurent (Max Planck Institute for Solar System Research)

Session Classification: Coffee break and poster session 2

Track Classification: Space weather and the solar-heliospheric connections