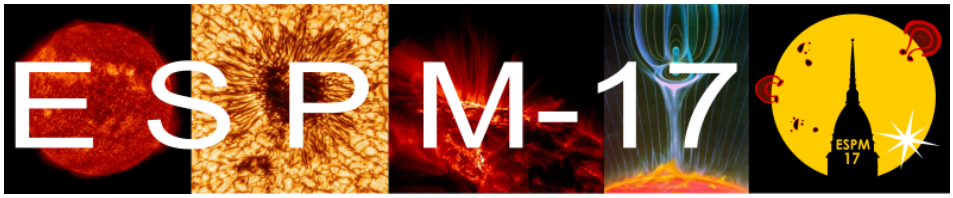

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Investigating plasma waves and flows in a chromospheric spiral structure using SST CRISP.

Twisted magnetic fields in the solar chromosphere are thought to give rise to a plethora of MHD waves and flows, enabling mass and energy channelling from the photosphere to the corona. Here we report on the statistical properties of observations of waves and flows in an apparently stable but relatively large-scale spiral structure (herein referred to as a "giant spiral"), close to disk centre, in H-alpha 656.3nm line core images, from the Swedish 1-m Solar Telescope (SST) CRisp Imaging SpectroPolarimeter (CRISP) instrument. The observations are analysed using CRISPEX in conjunction with a loop tracing algorithm called OCCULT2 allowing us to trace 100s of magnetic loops forming the giant spiral. Extracted magnetic loops are then read into Northumbria University Wave Tracking (NUWT) software to investigate the true nature of field aligned flows and waves. For the first time we reveal interesting new wave behaviour and flow dynamics in environments with varying degrees of magnetic twist. Subsequently, we report on the differing heating signatures, through correlation of the waves, flows and magnetic curvature, with co-spatial and co-temporal observations in the (E)UV with observations taken from the Solar Dynamics Observatory (SDO) Atmospheric Imaging Assembly (AIA).

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Session Classification: Coffee break and poster session 1

Track Classification: Energy and mass transfer throughout the solar atmosphere and structures within