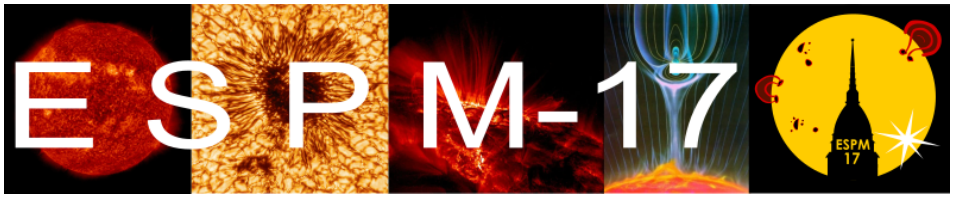

Contribution ID: **96** Type: **Poster**

Relation between magnetic field and convective cells morphology.

The emergence and evolution of solar granulation provide important insights into photospheric plasma dynamics. We investigate the temporal evolution of convective cells both in quiet and magnetised regions, tracking their evolution over periods of approximately 30 minutes.
We employed a pattern-recognition algorithm based on multiple intensity thresholds for solar granulation segmentation, termed 'multiple level tracking' (MLT; Bovelet & Wiehr, 2001). This algorithm ensures optimal adaptation to the solar structure under investigation and efficiently detects granular shapes on solar intensity images.
We present a statistical analysis of the temporal evolution of photospheric convective cell morphology and its relationship with the magnetic field properties. This study analyses Swedish Solar Telescope (SST) observations of active region NOAA 11768. The dataset comprises blue continuum images acquired with a 5.6 second cadence, used for individual granule segmentation, and spectropolarimetric maps from the Crisp Imaging Spectropolarimeter (CRISP) with a 30 sec cadence. Our results indicate that granular cell sizes and shapes are dependent on magnetic field strength, with granules tending to be smaller in regions of stronger magnetic fields. In the presence of highly inclined magnetic fields, granules exhibit increased eccentricity, and symmetric granules are not observed in these regions. Furthermore, mean upflow velocities and intensities of granules decrease with increasing magnetic field strength.

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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