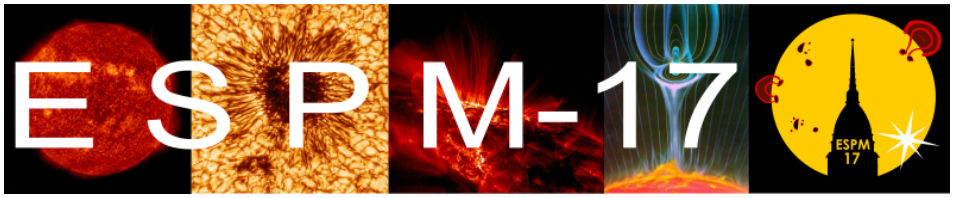


Contribution ID: **26** Type: **Poster**

# Investigating the Characteristics of Oscillating Bright Points in Different Solar Regions

This study, focused on exploring the properties of Bright Points (BPs) in different regions of the Sun, with a particular emphasis on their oscillatory behavior. They developed a machine learning model to identify and analyze BPs in solar images, achieving a 78% accuracy in BP identification, then used wavelet and Fourier analysis to investigate the oscillatory behavior of the identified BPs.

The study found both differences and similarities in the properties of oscillated and non-oscillated BPs across various regions, including the quiet Sun (QS), active regions (ARs), and coronal holes (CH). The damping per period and the maximum Doppler velocity (MDV) of BPs varied depending on the region. In the QS, internetwork BPs exhibited lower damping times and higher MDV compared to network BPs. In AR, internetwork BPs tended to have higher damping times and wider ranges of MDV compared to network BPs. In CH, both types of BPs displayed similar damping times, but internetwork BPs tended to have higher MDV.

The study also highlighted that the majority of AR network BPs were in the overdamping mode, indicating a stronger damping effect. In QS, internetwork BPs demonstrated overdamping behavior, while oscillated network BPs exhibited critical damping behavior. The researchers emphasized the complex nature of BPs and the need to consider the specific conditions in each region when studying their oscillatory behavior and damping-mechanisms.

The study serves as a valuable contribution to the understanding of BPs and their role in solar-activity, with implications for space-weather forecasting and the Sun-Earth relationship understanding.

**Primary author:** Ms SADEGHI, Rayhane

**Co-author:** Dr TAVABI, Ehsan

**Session Classification:** Coffee break and poster session 1

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