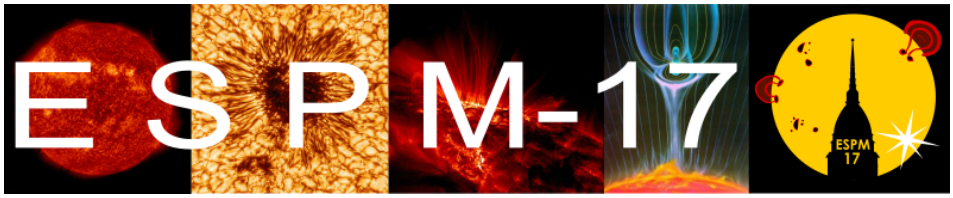

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Investigating Small-Scale Evolution and Energetics of Coronal Hole Boundaries Using High-Cadence EUV Observations

The origin and formation of the slow solar wind remain an open question in solar physics. One possible scenario is that the slow solar wind may arise from coronal hole boundaries (CHBs) via interchange reconnection. This process also dominates the small-scale evolution of coronal hole boundaries. In this study, we investigate the small-scale evolution of magnetic field and plasma properties at the boundary of a large equatorial coronal hole to identify signatures of interchange reconnection. Using data from the Solar Dynamics Observatory, the coronal hole boundary is identified and tracked across a 7-day observation period with very high spatial and temporal resolution. Differential emission measure analysis is used to derive plasma properties such as the emission measure, plasma temperature, plasma density, and thermal energy. We also implement the correlation dimension mapping analysis to measure the irregularities of CHB and correlate them with the change in plasma and magnetic properties. All of these enable us to effectively analyse the shift in CHB and the evolution of relevant magnetic and plasma properties on very short temporal scales, providing insight into the ongoing process of interchange reconnection at the edge of the coronal hole and the surrounding region.

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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