## 9th Metis Workshop



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## Unraveling Solar Dynamics: Metis Observations of Eruptive Flux Ropes and Magnetic Disturbances

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This study presents observations of a solar eruption captured by the Metis coronagraph on October 12, 2022. Utilizing total brightness data with normalized running differences, we measured the inclination of helicoidal structures, revealing a notable trend: as the polar angle increases, the inclination decreases.

Further analysis, including the examination of EUI images, reveals evidence of an eruptive flux rope in the lower corona with distinguishable footpoints. Despite a 2-minute time cadence limiting direct correspondence among filamentary structures in consecutive frames, we speculate that Metis helicoidal features may be interpreted as a consequence of the growing and opening flux tube in the outer corona.

Additionally, we measured the helix pitch and plan to compare these measurements with parameters from the high-resolution magnetohydrodynamics simulation by Wyper et al. (2022). This comparison aims at exploring disturbances launched into the solar wind via intermittent/bursty interchange reconnection and assess how Metis observations align with the repeated ejection of plasmoid flux ropes into the solar wind obtained from the simulation.

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