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Poster
The forthcoming PUNCH (Polarimeter to UNify the Corona and Heliosphere) mission, scheduled for a 2025 launch, aims to deepen our understanding of the transformation of coronal structures into the ambient solar wind. This mission is set to capture polarized images over an unprecedented field of view from 4 to 180 solar radii. In anticipation of this mission, we have created SynCOM (Synthetic Coronal Outflow Model), an empirical model driven by data that models the outflow dynamics of the solar corona using high-resolution data. SynCOM has the ability to create synthetic images showing realistic radial variations in polarized brightness, incorporating stochastic elements to account for physical variations in plasma outflow and instrumental noise. This presentation will highlight the latest developments in SynCOM's simulated images, drawing on data from the STEREO-A/COR2 instrument. Additionally, we will discuss the testing and application of the model through prevalent tracking algorithms. Moreover, we will assess the potential of combining our techniques with FORWARD modeling to generate synthetic polarized images, which could be instrumental in interpreting the flow patterns detected by the imminent PUNCH mission.
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