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Oral
(Invited Talk)
The upcoming PUNCH mission will provide a full field of view from pole to pole and fill existing gaps between coronagraphs and heliospheric imagers, and will obtain polarized brightness measurements which may be used along with brightness measurements as a powerful tool for imaging and localizing features in three dimensions. For substructures of interplanetary coronal mass ejections (ICMEs), it provides a means of observing the evolution of ICME substructure in transit and analyzing the chirality, or handedness of magnetic twist of the ICME flux rope. In addition, it can be shown that the polarization ratio in the quiescent solar wind diagnoses the departure of the background solar wind from an inverse-squared density falloff. In order to demonstrate these capabilities, we present synthetic polarization from forward modeled flux ropes and global MHD simulations of ICMEs evolving and interacting with the background solar wind and compare the predictions of PUNCH-style polarization diagnostics to simulation ground truth.
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