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Models for simulating CME behavior tend to come in two varieties, sophisticated, complex models that try and capture as many details as possible driven by fundamental physics equations and simplified, efficient models that can quickly produce results on time scales needed for forecasting. OSPREI is a hybrid of these two extremes, the algorithms are simplified but it is still physics-driven. OSPREI can simulate the evolution of a CME from the Sun to Earth (or beyond) in about a minute, including any coronal deflection and rotation, the interplanetary (IP) evolution, and the expected arrival time and in situ properties. We discuss how PUNCH observations can couple with OSPREI modeling. In particular, CME observations that extend out to farther radial distances can help validate and potentially target areas of improvement in OSPREI's IP component. Combining PUNCH WFI observations with STEREO HI observations could yield estimates of a CME's 3D IP trajectory and provide better constraints on IP deflection, a behavior not yet included within OSPREI.
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