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Extant methods to model solar active regions are typically either resource-intensive, or have difficulty reproducing the complex, nonlinear physics involved in CME formation and evolution. The high cadence and accuracy of the new measurements of PUNCH will necessitate a more robust way to bridge the gap between simulations meant for scientific inquiry; and fast models for operational forecasting. Machine Learning techniques can provide exactly such a bridge. The initial conditions for CMEs that erupt and propagate through PUNCH's field of view is a major crux for method improvement. We present new results on using a Physics-Informed Neural Network to reproduce historic solar active regions.
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