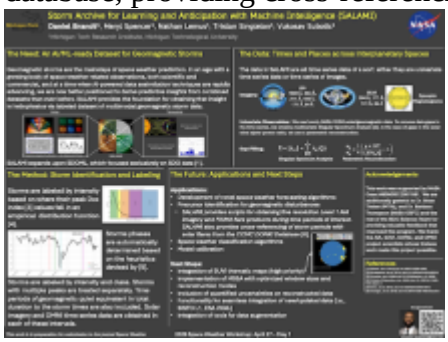
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Poster
The mainstay phenomenon of space weather prediction is the geomagnetic storm. Predicting the onset and intensity of geomagnetic storms to a high degree of accuracy and precision requires principled determination and characterization of solar precursors, prediction of solar wind conditions that control geoeffectiveness, and rigorous quantification of energy transfer from upstream solar wind conditions to the magnetosphere-ionosphere-thermosphere system across multiple temporal and spatial scales. Achieving these objectives can be accomplished most effectively with the use of a geomagnetic storm catalogue consisting of a harmonized dataset of multichannel space weather data prepared for direct ingestion by Artificial Intelligence/Machine Learning (AI/ML) algorithms and exploration with complex statistical models. To enable the attainment of this goal, we present the Storm Archive for Learning and Anticipation with Machine Intelligence (SALAMI). SALAMI is an AI/ML-ready dataset composed of gap-filled solar and geomagnetic time series data, along with solar imagery from SDO/AIA, GOES-R/SUVI, and GONG. The dataset is accompanied by Python tools that integrate it with JSOC to provide targeted downloading of high-resolution Level 1 AIA data, as well as the CCMC Donki database, providing cross-referencing of geomagnetic storms with solar flares.


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