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Title: Space Weather Data Products and Modeling Capabilities at Los Alamos National Laboratory

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Abstract Submission

Title1:
Space Weather Data Products and Modeling Capabilities at Los Alamos National Laboratory

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Short Abstract1:
We present an overview of space weather data products (e.g., GPS, GEO) acquired by Los Alamos National Laboratory which has been involved in measuring and monitoring the space environment for over 50 years. In addition, Los Alamos has developed a number of space weather modeling capabilities over the years. These include: DREAM (a data-assimilative code) and DREAM3D (a basic physic diffusion code), which are designed to model the evolution of the Earth's hazardous natural and artificial radiation belts; SHIELDS/RAM-SCB, which is a state-of-the-art set of coupled codes to model the ring current/surface-charging environment in the near-Earth region; and the on-going Carrington/GIC project which will extend this modeling capability down to the ground in order to understand impacts on power grid infrastructure during extreme geomagnetic storm events.