

## Community Coordinating Modeling Center (CCMC): A hub for collaborative assessment and improvement of space weather capabilities.

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The Community Coordinated Modeling Center (CCMC, <http://ccmc.gsfc.nasa.gov>) was established at the end of past millennium as a multi-agency strategic investment in the US space weather program. The CCMC has two main goals: 1) to support space weather research and model development aiming to advance understanding of space weather phenomena and to improve forecasting; 2) to facilitate development of space weather applications and deployment of operational capabilities. The CCMC hosts a rapidly growing collection of space weather models and applications, provides simulations services to the international research community through a one-of-a-kind runs-on-request system, and maintains real-time simulations and perpetual archives of space weather information streams. In support of NASA missions, the CCMC provides support for mission planning, develops applications for space weather monitoring and forecasting, and provides space environment analysis services. In partnership with NASA Space Radiation Analysis Group (SRAG) and international modeling community the CCMC is building a flexible system for Solar Proton Event (SPE) risk assessment and forecasting in support of human exploration. Unbiased testing, evaluating and prototyping of new models and forecasting techniques for potential transition to operational organizations (R2O) is one of the primary CCMC functions. To establish internationally recognized metrics and benchmarks the CCMC initiated an international community-wide Forum for Space Weather Capabilities Assessment. Guided by the unfolding activities of Forum working teams as well as by the needs of operational agencies and end users to quantify and track improvements over time, the CCMC has begun to develop an extensive information technology infrastructure to support validation activities through a centralized database and an interactive web-based framework. The presentation will highlight the recent progress and discuss opportunities for international research initiatives aiming to improve space weather forecasting capabilities.

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