

Overview of CCMC tools and activities in support of research, education and advancing of space weather predictive capabilities.

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The Community Coordinated Modeling Center (CCMC, <https://ccmc.gsfc.nasa.gov>) was founded in 2000 as a multi-agency strategic investment into the National Space Weather Program. The main goals identified in the CCMC concept of operations are: 1) to facilitate space science and space weather research, education and model development; 2) to support the transition of research models to space weather operations. The CCMC serves as an access point to state-of-the-art capabilities in space science and space weather modeling through the CCMC-developed Runs-on-Request (RoR) system. The RoR service executes space environment simulations via the Internet upon customer request and enables interactive on-line visualization and analysis of simulation results. The CCMC is enabling community access to and evaluation of deliverables from national space weather programs and is maintaining a centralized portal for research products-candidates entering the Research-to-Operations (R2O) transition pipeline. To evaluate model operational readiness the CCMC is developing automated software systems for continuously running models, analyzing and logging performance in real-time. The CCMC is developing, maintaining, and expanding infrastructure for model validation projects organized by International Space Weather Action Teams (ISWAT), including Forecasting Methods Scoreboards for pre-event ensemble forecasts, evaluation suites based of historic time intervals, and interactive archives of evaluation results. The presentation will overview emerging model validation campaigns supported by the CCMC and on-going efforts to establish shared environment for collaborative evaluations and improvements.