• Catalog of space weather phenomena.
• Knowledgebase of interpretations, simulation results, and forecasting analysis.
• Online tool for dissemination of forecasts, notifications, and archiving event-focused information.
• SW DONKI is a key component of the forecaster tool suite, developed to address space weather needs of NASA missions.

**DONKI Features**

- Chronicles the daily interpretations of space weather observations, analysis, model results, and forecasts provided by the CCMC/Space Weather Research Center (SWRC) team.
- Comprehensive search functionality to support anomaly analysis and space weather research.
- Space weather activity archive (flares, CMEs and simulation results, SEPs, geomagnetic storms, radiation belt enhancements).
- Intelligent linkages, relationships, cause-and-effects between space weather activities.
- Automatic dissemination of forecasts and notifications (coming soon).
- Enable remote participation by students, world-wide partners, model and forecasting technique developers.

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The Stereo CME Analysis Tool (StereoCAT) is an online tool available worldwide that enables space weather forecasters and researchers to quickly calculate CME kinematic properties. With a few mouse clicks, StereoCAT uses triangulation of spacecraft data to determine the 3D kinematic properties of CMEs.

The derived CME parameters can be utilized as input for a broad range of CME propagation models. For example, CCMC Runs-on-Request users can use StereoCAT to generate input parameters for WSA-ENLIL+Cone model. This model now has a new Fast Track Submission option which enables real-time CME arrival predictions. Together, StereoCAT and WSA-ENLIL Cone Fast Track is an innovative solution to engage the world-wide community in real-time forecasting methods validation.

**StereoCAT Highlights**

- Determine CME speed, and direction by triangulation using multiple spacecraft (STEREO A, B, and SOHO)
- Create CME height-time measurements ("frameseries range")
- Create an ensemble of CME measurements
- Save your entire measurement session and easily share with others

Quick start instructions:
Select the date/time of interest, click on the spacecraft name you would like to use (up to two), then click the measurement tab to measure the CME using the handles, then click results. For more instructions click the "Manual" tab.

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Runs on Request - Next Gen

- Efficient
- Automated
- Flexible
- On Demand

Runs on Request - Next Gen (RoR-NG) is the next generation of model runs on request at CCMC. RoR-NG is a complete redesign of RoR with a focus on efficiency, automation, and flexibility. RoR-NG is a central hub dedicated to queuing model requests and automatically handing them off to the available computational resource at CCMC. The nodes running the model will keep RoR-NG and users informed of their progress. Outputs are automatically returned the CCMC data warehouse. In addition to the normal data cubes and output files, RoR-NG will insert meta data into a searchable database for future research.

RoR-Next Gen Highlights

- Central hub for run request, queue management, and results
- Efficient: Designed to take full advantage of CCMC computational resources. With multiple virtual machines available for each model RoR-NG delivers the request to next available resource.
- Automated: Provides tracking information to user: status, wait time, progress
- Flexible: add new computational resources and models as needed.
- Research: Provides better searching tools for historical runs. More output will be cataloged as meta data and placed into database.

What’s already implemented?
WSA-Enlil+Cone is the first model running on RoR-Next Gen. A simple user interface has been designed specifically for WSA-Enlil+Cone. As we improve the framework we will add more models and improve the user experience.

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Runs on Request – Next Gen

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RoR-Next Gen Highlights

• Central hub for run request, queue management, and results
• Designed to take full advantage of CCMC computational resources. With multiple virtual machines available for each model RoR-NG delivers the request to next available resource.
• Provides tracking information to user: status, wait time, progress
• Add new computational resources and models as needed.
• Provides better searching tools for historical runs. More output will be cataloged as meta data and placed into database.
I’m requesting WSA-Enlil with parameters...

Show runs that hit the earth.

RoR-Next Gen Web Interface

Model Service Layer

Model registry

Run Meta

requests

How much longer?

Availability

Requests

Progress

virtual machine model runner

virtual machine model runner

virtual machine model runner

CCMC Data warehouse
Example Front End
The space weather scoreboard is a research-based forecasting methods validation activity for CME arrival time predictions which provides a central location for the community to:
• submit their forecast in real-time
• quickly view all forecasts at once in real-time, and
• compare forecasting methods when the event has arrived.

All types of prediction models and methods are welcome from the world-wide research community for inclusion. There are currently 17 registered CME arrival time prediction methods, including entries from the Space Weather Research Center.

For More Information contact chiu.wiegand@nasa.gov or m.leila.mays@nasa.gov