

Cloud-Enabled Space Weather Modeling and Data Assimilation Platform

www.cybera.ca/project/ceswp

Project Goal

To enable researchers to collaborate and make sense of complex space weather data, and to increase computational resource capacity, while reducing operational complexity and costs.

About CESWP

The Cloud-Enabled Space Weather Modeling and Data Assimilation Platform (CESWP) project will simplify researcher access to space weather simulation tools using cloud computing technologies. CESWP will provide a seamless entry point to these simulation tools that will dramatically improve the sustainability, flexibility, and performance of the simulation technology. It will also result in improvements in research productivity and efficiency. The CESWP project is the second stage of the Canadian Space Science Data Portal (CSSDP) project.

What is Space Weather?

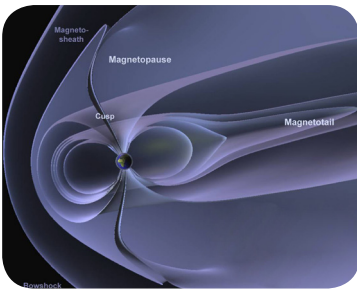


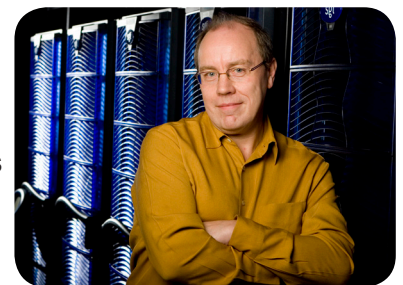
Photo Credit: University of Alberta

Space weather occurs in the environment existing between the Sun and Earth. It presents extreme hazards to astronauts, communications and global positioning satellites, and ground-based communications, power, and pipeline distribution systems. Scientists study ways to understand and forecast space weather events in an effort to avoid interruptions to these vital systems. It adds advanced computer modelling capabilities to the CSSDP platform, allowing Alberta space science researchers to more effectively contribute to the scientific objectives of international space missions. The merging of data with models and on-demand computing, will create an operational framework that facilitates improved specification of conditions in near-Earth space.

Cyberinfrastructure at Work

CESWP demonstrates the following cyberinfrastructure innovations:

- Cloud computing technologies to simplify access to leading-edge simulation tools
- Powerful computing resources to process large data sets
- Data storage and management capabilities
- Advanced networks to connect national and international partners



Robert Rankin, Professor, Department of Physics, University of Alberta, and Principal Investigator, CESWP

Partners



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