New Visualization and Analysis Tools for Magnetospheric, Heliospheric, and Solar Models

Presented by: David Hyon Berrios
Community Coordinated Modeling Center
NASA Goddard Space Flight Center
Overview

• Introduction
• Kameleon library
• Space Weather Explorer
• Data streaming service
• Future
• Summary
Software suite that consists of two parts

1. Conversion software

2. Access and interpolation software
Data access and interpolation library provides a single common interface for all supported models.

Introduction • Kameleon • Space Weather Explorer • Data Streaming • Future • Summary
Space Weather Explorer 2

- Java-based 3D visualization program
- Supports multiple models
- Requires no installation!

Introduction - Kameleon - Space Weather Explorer - Data Streaming - Future - Summary
Space Weather Explorer 2

- 2D and 3D visualizations
- Support for multiple models
- Multiple ways of initiating fieldline calculations: clicking, importing
- Export saved state, images, seed position information
- Interactive and simple to use!
Space Weather Explorer 2

- 2D and 3D visualizations

Introduction • Kameleon • Space Weather Explorer • Data Streaming • Future • Summary
Space Weather Explorer 2

- Intuitive interaction
Data Streaming

- API to request interpolated data, visualization structures, and images
- Request encoded in URL to webserver
- Data processed on server using Kameleon
- Data sent to client in JSON or image format
Web-based visualizations

- WebGL and data streaming service
- Collaborative visualizations
Summary

- WebGL and HTML5 version of Space Weather Explorer - soon!
- Collaborative tools