Advancements in Space Weather Prediction Technologies: The Cloud-Based SWx TREC Model Staging Platform
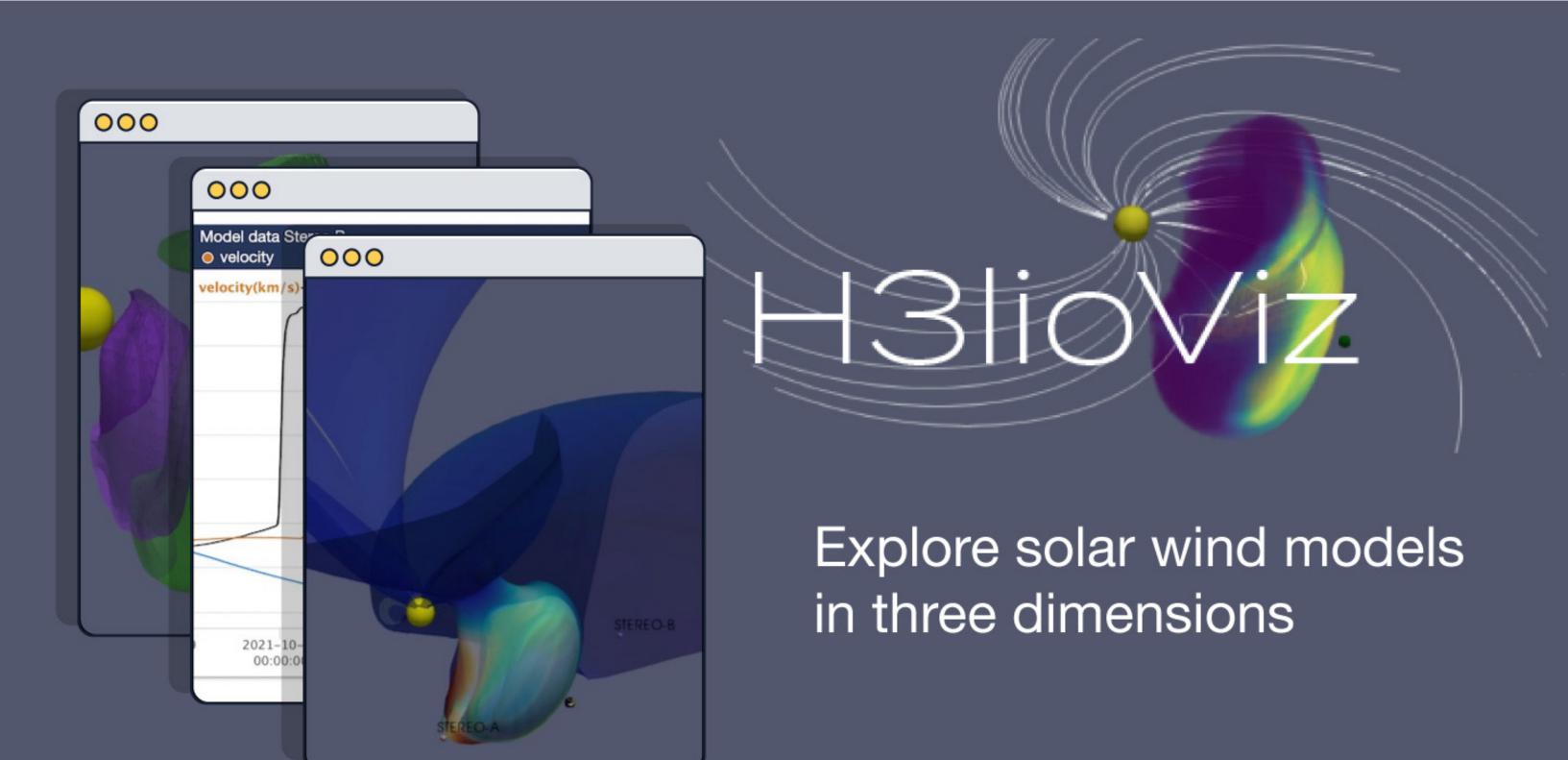
The SWx TREC Model Staging Platform (MSP), at swx-trec.com, integrates state-of-the-art computational models, observational data, and machine learning techniques to provide real-time and predictive insights into space weather events without needing to install or learn how to run any of the models locally.
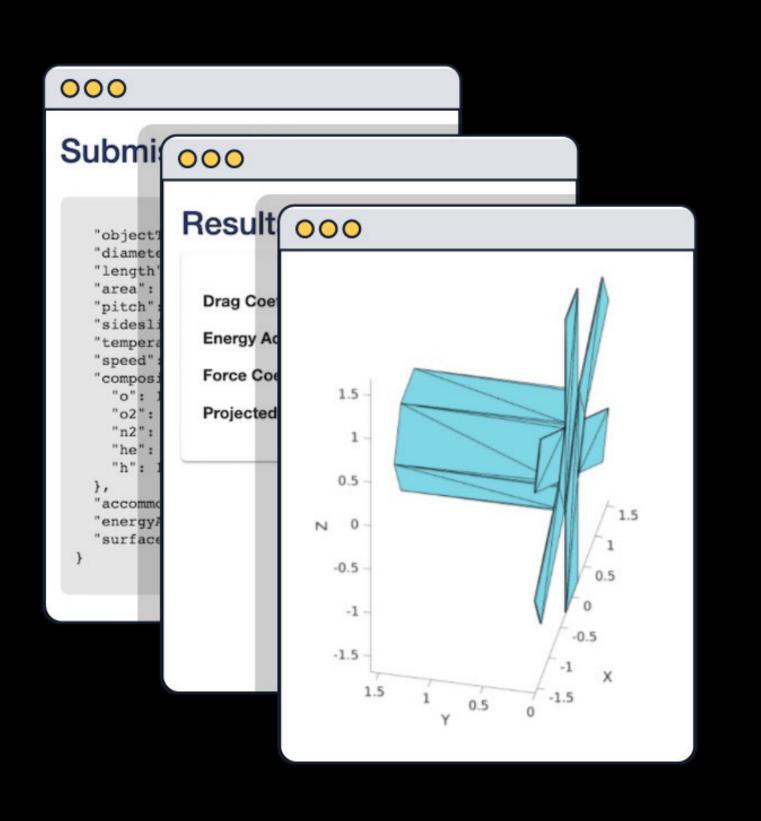
The MSP brings software best practices to space weather research by keeping the data and analysis pipelines all in a consistent ecosystem, enabling researchers to run models anywhere, without having to move data between locations or computers.

The modular, reusable architecture of the SWx TREC MSP facilitates rapid development and deployment of custom applications, content, and data visualizations.
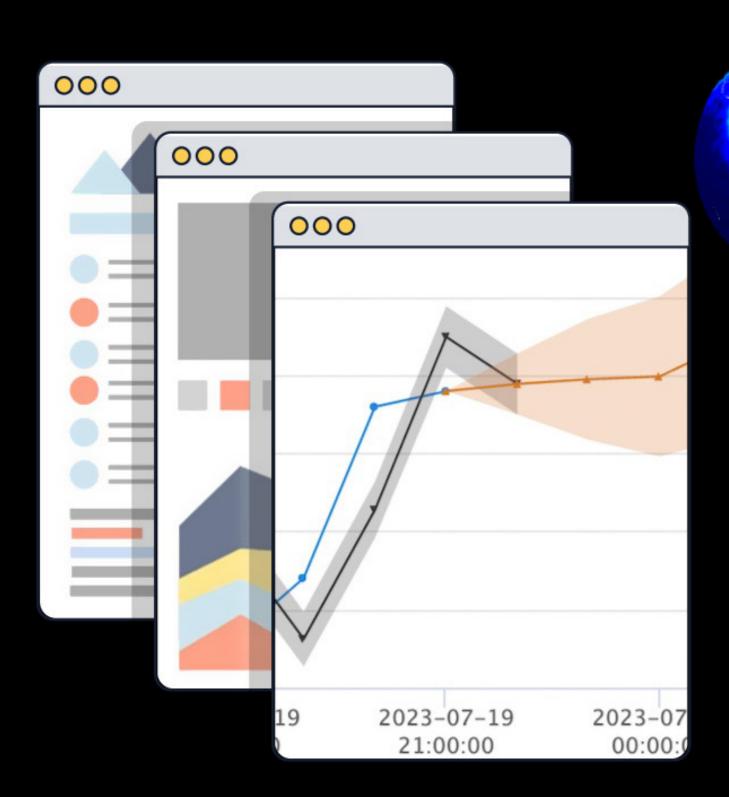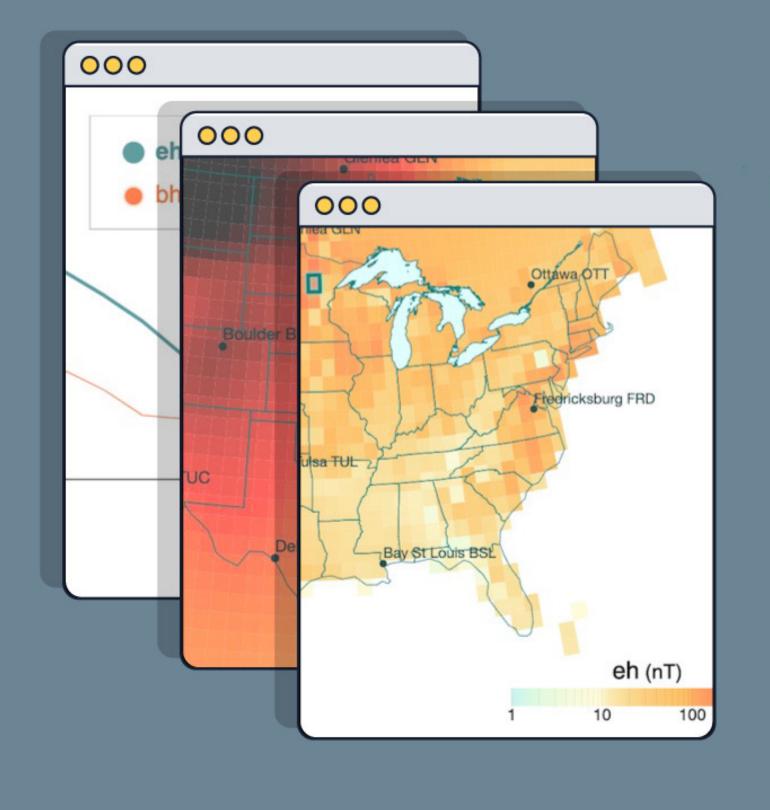
https://swx-trec.com

H3lioViz

Explore solar wind models in three dimensions

VECTOR — Vehicle Environment Coupling and TrajectOry Response

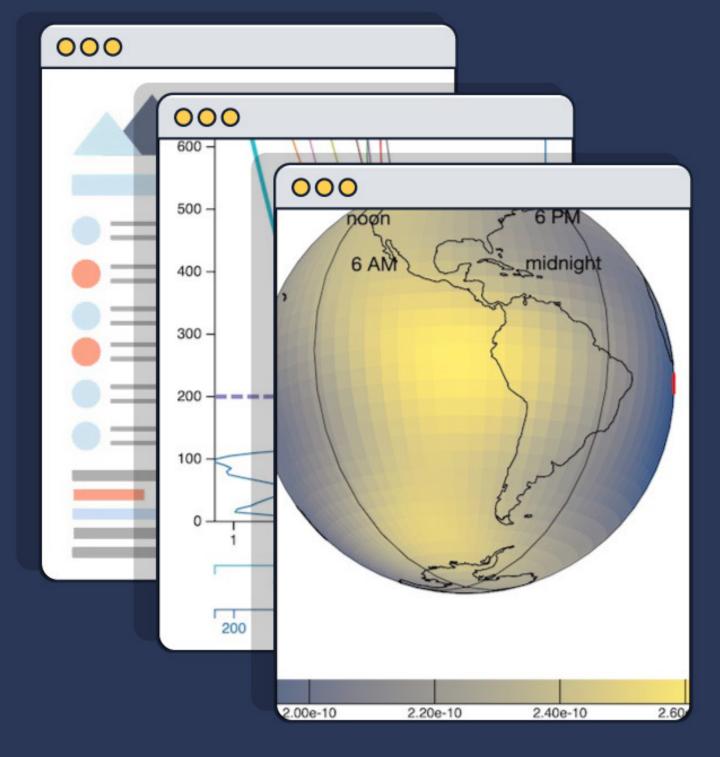Drag coefficient calculated from a spacecraft's geometry and its surrounding environment

LiveDst — Geomagnetic storm prediction

Predict solar storm intensity in real time
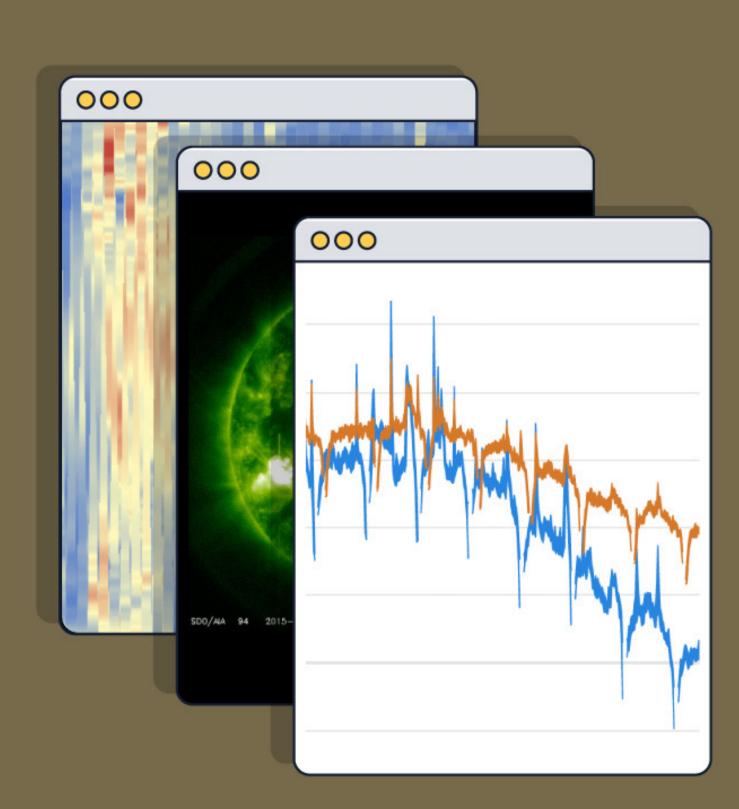
LiveWire — Geoelectric field prediction

Real-time maps of geoelectric and geomagnetic fields

MSIS Atmosphere Model

Explore atmospheric composition and profiles through time

SWx TREC Space Weather Data Portal

Explore space weather from Sun to mud