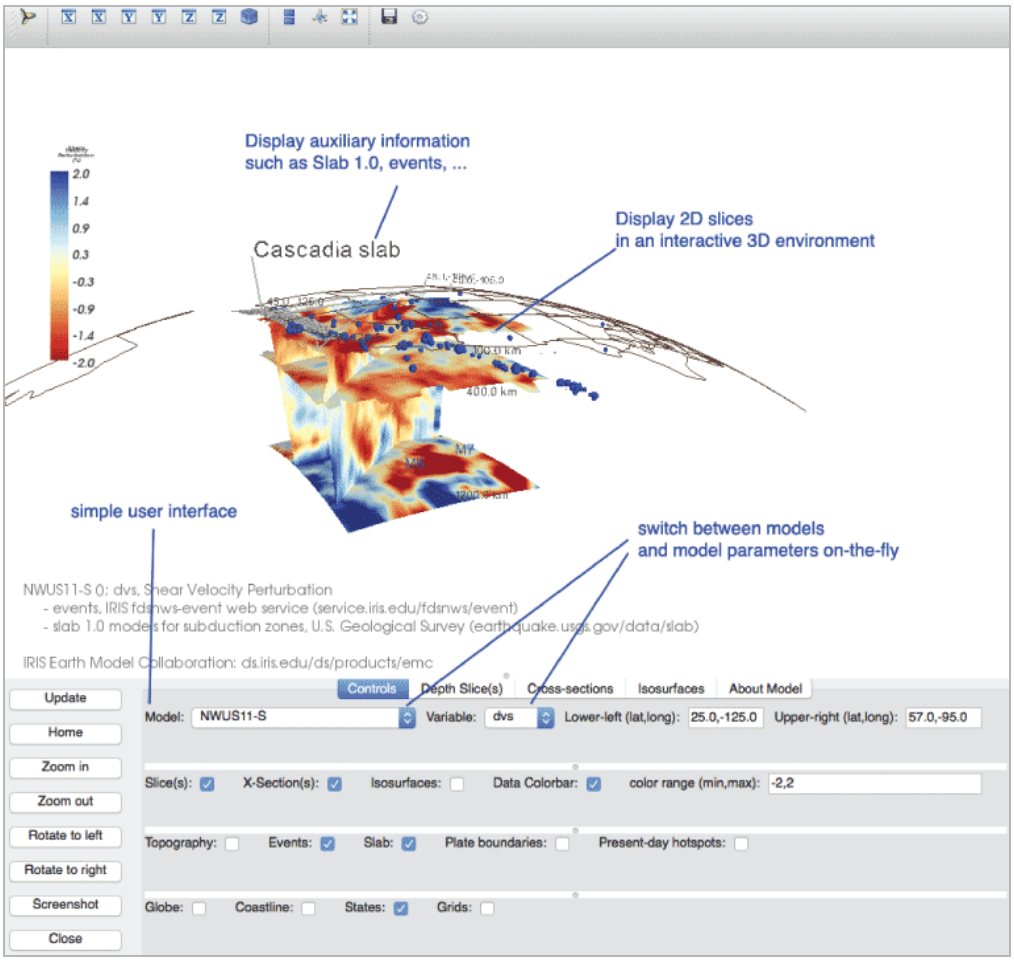
Latest data access and data product developments at the IRIS DMC

Chad Trabant, Manoch Bahavar, Robert Weekly, Mick Van Fossen, Alex Hutko, Tim Ahern
IRIS Data Management Center

The IRIS Data Management Center (DMC) is the primary distribution point for USArray and other EarthScope data. The DMC currently manages approximately 50 terabytes of EarthScope data and distributes more than that volume annually. In addition to raw data, the DMC develops and distributes higher level data products. We will present highlights of EarthScope data statistics at the DMC, the latest data access advancements and the most recent data product developments.

A suite of mature web services provides the foundation for nearly all data access at the DMC. This foundation is used to offer data through web interfaces such as Wilber 3 (event data), Web Request, email formats such as BREQ_FAST and is the basis for data access through MATLAB, Python, R, Java and command-line scripts. With an increasing number of seismological data centers offering their data via standardized interfaces, end users may access data across data centers using the same software. Leveraging these compatible interfaces, we have created a catalog of data holdings at multiple data centers and a web service for accessing the catalog. With minimal adaptation, software designed to work with FDSN data services can use this new data catalog to facilitate collection of data from multiple centers. The DMC has adapted some of the most popular data access mechanisms to make such federated access a straightforward reality.

Recently we have released data products related to aftershocks, global waveform stacks and an open-source, portable, desktop 3D Earth model viewer.



The 3D model viewer is designed for use with models in our Earth Model Collaboration (EMC) repository, or other Earth models in netCDF format. This viewer is Python-based and will run on various platforms with only a few extra modules needed. The goal of this viewer is to provide simple, interactive 3D visualization capabilities that bridge the gap between complex viewers (e.g. Unidata's IDV and ParaView) and the EMC's existing 2D model slices.

Figure (left): A screenshot of the EMC 3D model viewer showing the primary visualization controls and capabilities.