PyVista

VTK implements an object-oriented approach to 3D visualization, and PyVista adheres to that underlying structure to provide an API that expands on VTK's data types. These expanded, wrapped types hold methods and attributes for quickly accessing scalar arrays, inspecting properties of the dataset, or using filtering algorithms to transform datasets. PyVista wrapped objects have a suite of common filters ready for immediate use directly on the objects. These filters are commonly used algorithms in the VTK library that have been made more accessible by binding a method to control that algorithm directly onto all PyVista datasets, providing a shared set of functionality. Through the use of these bound filtering methods, powerful VTK algorithms can be leveraged and controlled via keyword arguments designed to be intuitive for novice users.

At its core, PyVista is a pure Python helper module for VTK that interfaces back to VTK data objects through NumPy and direct array access adhering to VTK's object-oriented approach to 3D visualization. The PyVista Python package provides an accessible and intuitive interface back to the VTK library to facilitate rapid prototyping, analysis, and visual integration of spatially referenced datasets.

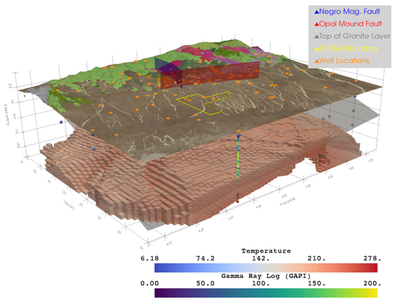


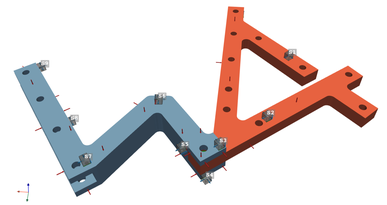
Figure demonstrates an integrated scene of geospatial data generated by PyVista:

3D plotting and mesh analysis through a streamlined interface for the Visualization Toolkit (VTK)

Take a picture to download the full paper

External Examples

pyFBS

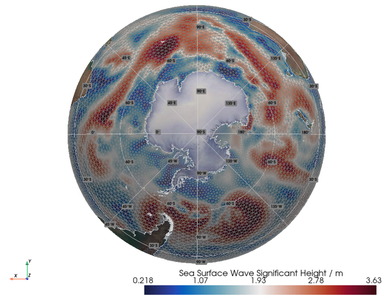


pyFBS is a Python package for Frequency Based Substructuring, Transfer Path Analysis and also, as a new addition, multi-reference modal identification.

Take a picture to download the full paper

GeoVista

Cartographic rendering and mesh analytics powered by PyVista



Take a picture to visit the GeoVista website