fatiando a terra

An open-source Python library for modeling and inversion in geophysics.

Our goal is provide a comprehensive and extensible framework for geophysical data analysis and the development of new methodologies.

Research

Make your research more **reproducible** by writing a Python script or Jupyter notebook instead of clicking through complicated menus.

Development

Don't start from scratch! Build upon the existing tools in Fatiando to develop new methods.

Teaching

Combine Fatiando with the Jupyter notebook to make rich, interactive documents. Great for teaching fundamental concepts of geophysics!

Overview

Gravity and magnetics

Modeling, inversion, and processing for potential field methods.

3D forward modeling with prisms, polygonal prisms, spheres, and tesseroids. Handles the potential, acceleration, gradient tensor, magnetic induction, total field magnetic anomaly.

Grid manipulation

Functions for generating and operating on regular grids and data that is on a map.

Generate regular grids and point scatters. Cut grids and extract profiles. Interpolate irregular data.

Seismology and Seismics

Simple modeling functions for seismics and seismology.

Toy problems for: Cartesian straight-ray tomography, VSP, epicenter estimation. Experimental finite-difference wave propagation.

Geometric objects and meshes

Classes that represent geometric objects (points, prisms, polygons, tesseroids) and meshes (regular prism mesh, points on a grid).

Standard classes used in all of Fatiando. Efficient classes for meshes that save storage and behave as iterators.

Get started

See the install instructions to set up your computer and install Fatiando.

Once you have everything installed, take a look at the Documentation for a detailed tour of the library. You can also browse the Gallery and Cookbook for examples of what Fatiando can do.

Stay informed

Sign up to our mailing list to keep up-to-date with new releases and events and give your feedback.

Get help

There are many ways to contact us:

- Write to our mailing list.
- Join us on our open Gitter chat room.
- Report bugs through Github.

If you come across a bug, please include in your message: your operating system, Python version, Fatiando version, code that generated the error, the full error message.