

Convert to R for Seismic Analysis

Introduction

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 - **MacOSX**



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- GEOmap (Maps, Geography, Geology)



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 - TauP.R

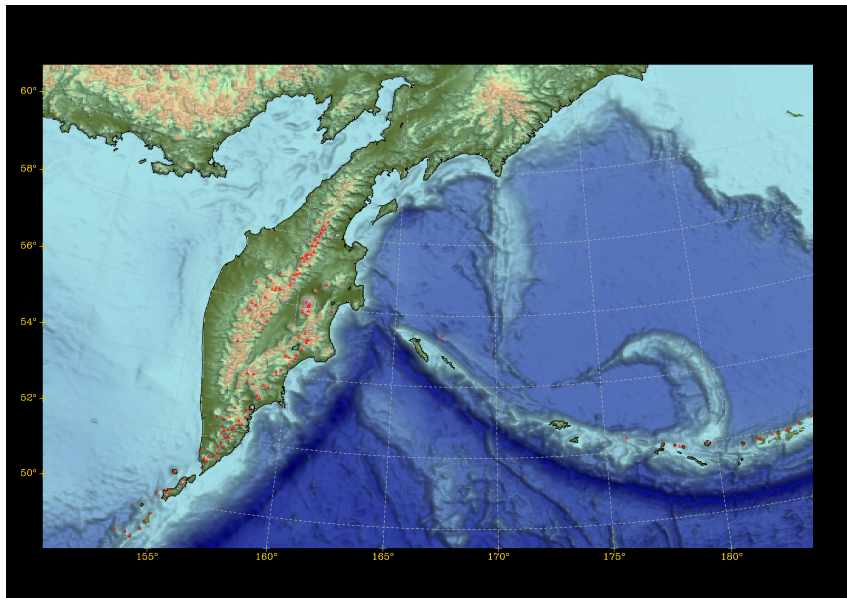


GEOmap

- Topographic/Geologic Maps
- Interactive Map
- Geographic Projection
- Geologic Symbols
- Polygon/Area Analysis
- Great Circles
- Cross Sections



GEOmap: Kamchatka-Aleutians



RSEIS

- Seismic and Time Series Analysis
- Reads seismic data SAC, SEGY, AH, ASCII
- Spectrograms (MTM, AR, Wavelet)
- Data-Base Extraction of seismic traces
- Filtering
- Deconvolution
- Hodograms (Particle Motion)
- Predict Arrival times
- Moveout Displays
- Event Location
- Corner Frequency
- Attenuation



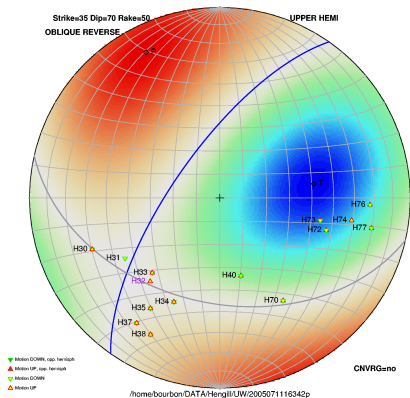
Rquake

- Locate Earthquakes
- Picking of phases
- Estimate hypocenter error ellipsoids
- Graphics
- Jackknife Hypocenters
- Statistics

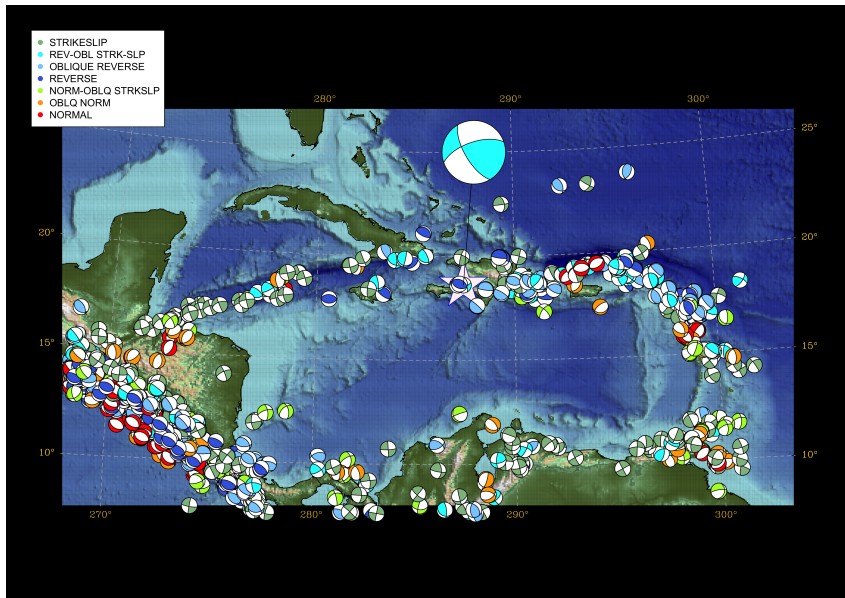


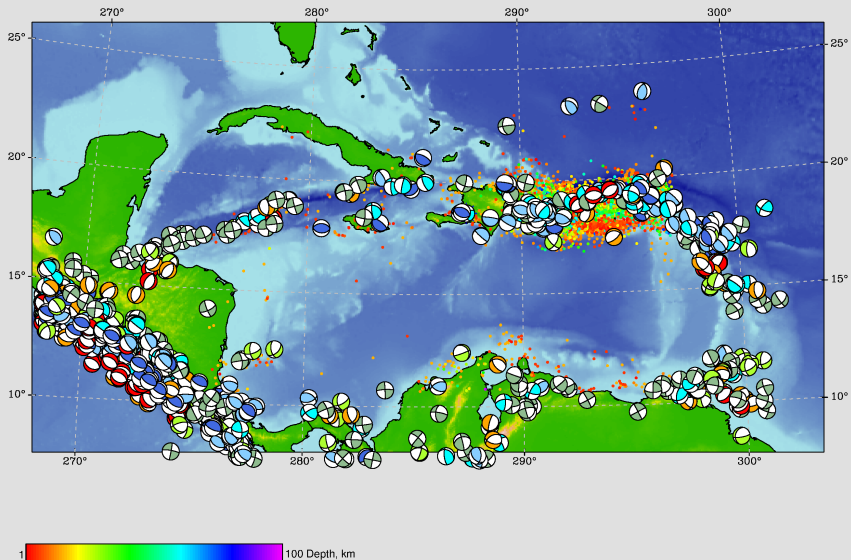
RFOC: FOCAL Mechanisms

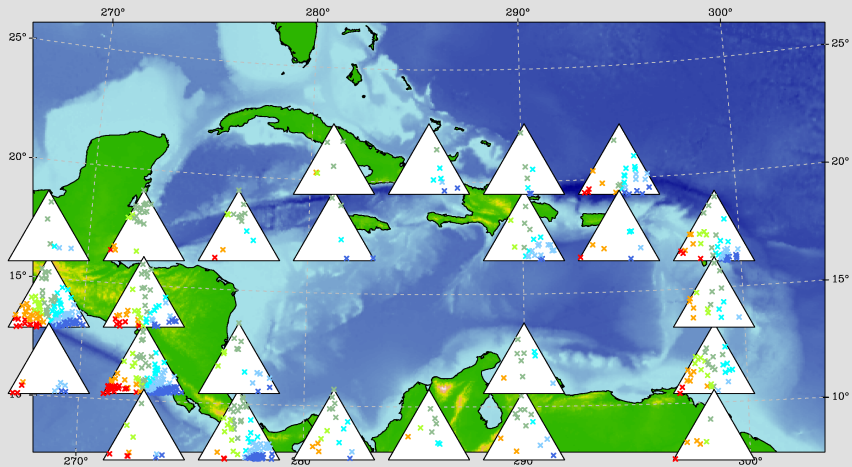
- Graphics for Spherical Distributions
- Earthquake Focal Mechanisms
- Graphics for statistics on a sphere

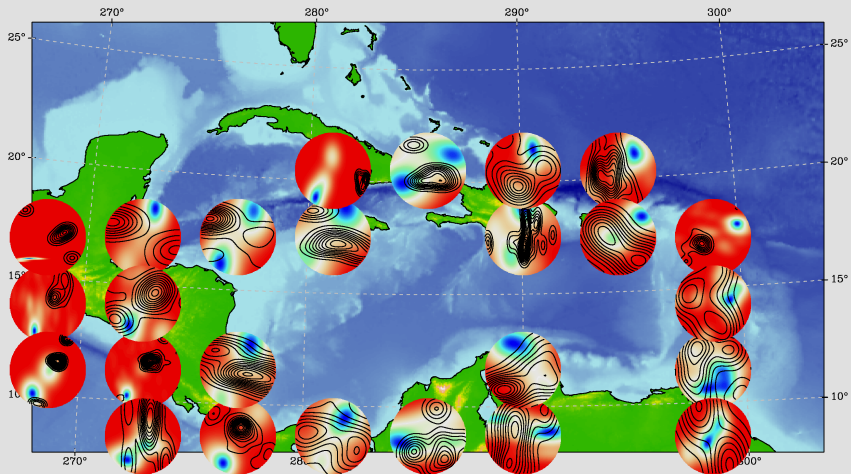


GEOmap: Haiti Earthquake

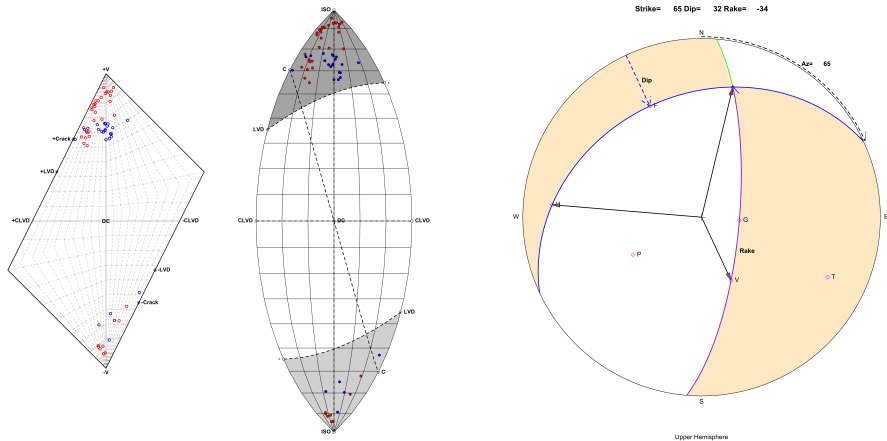






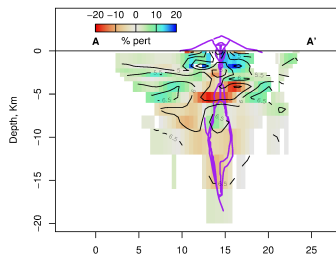
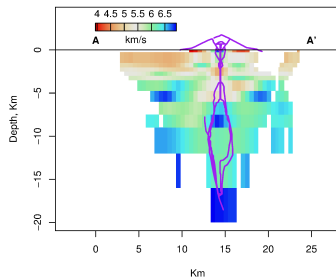


RFOC

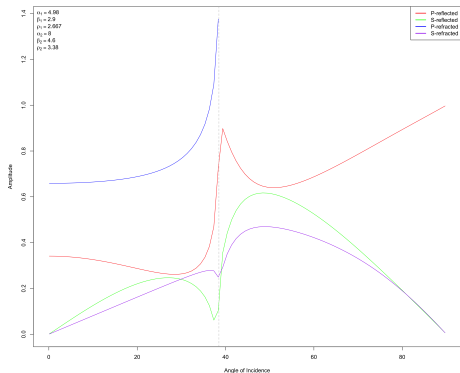


RTOMO

- Visualization for seismic tomography
- 2D tomographic inversion

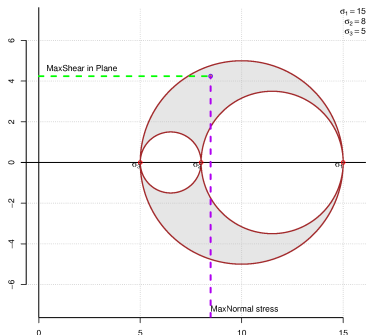


- Zoeppritz (Knotts) Equations
- Calculate and plot scattering matrix coefficients for plane waves at interface



geophys

- Stress Strain
- Mohr's Circle (2D and 3D)
- Fry analysis
- Mogi Analysis

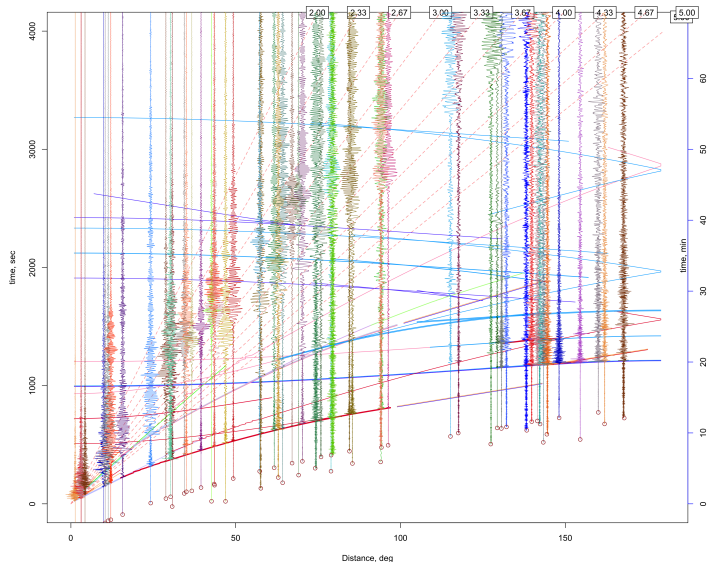


TELES

- Plotting of teleseismic arrivals as seismic sections
- Tau-P prediction of global arrival times (Jake Anderson)
- plotting arrival times of standard phases
- plotting of surface waves



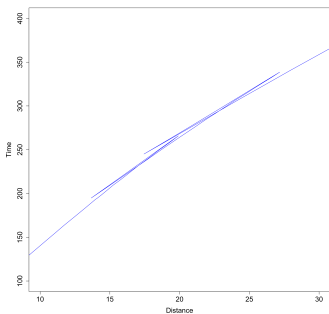
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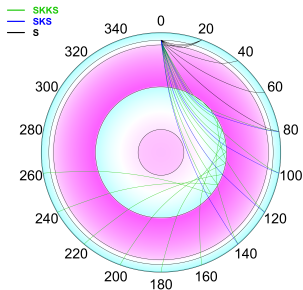
TauP.R Example

Travel Time Curves

P-wave Travel Time Curve



Global RayPath Plots



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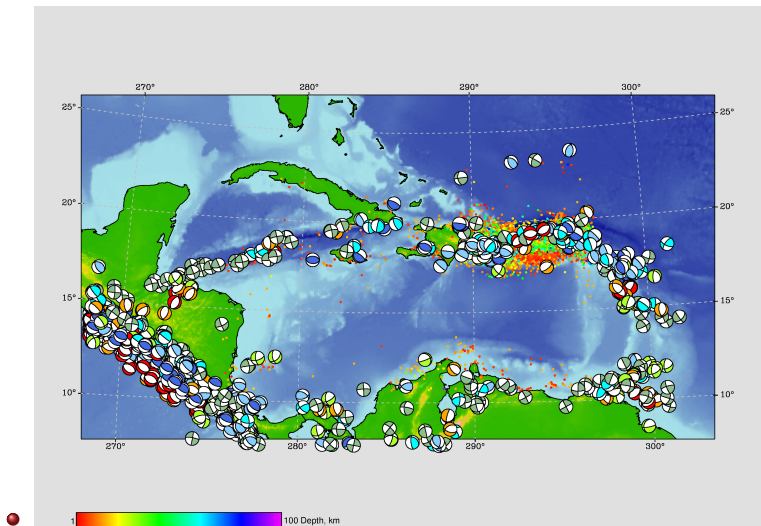
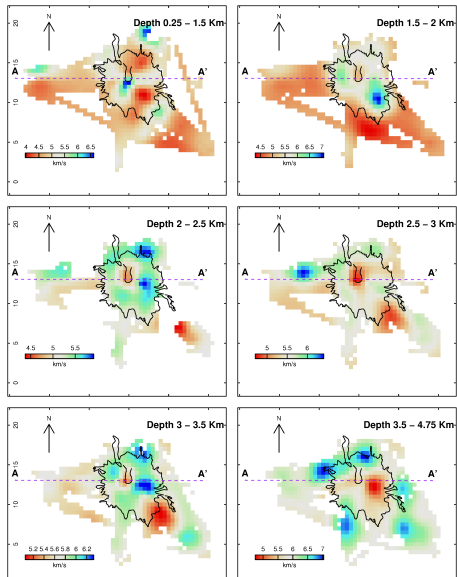
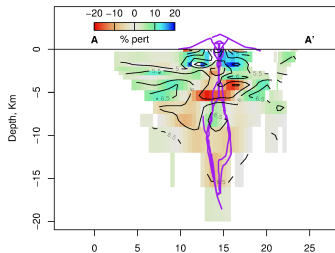
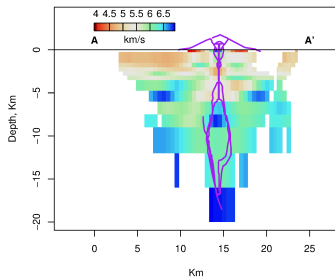


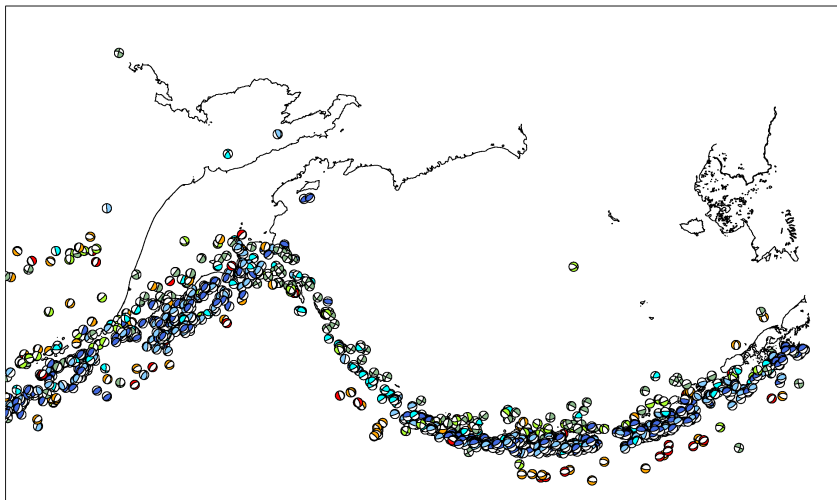
Figure : GEOmap/RFOC Example

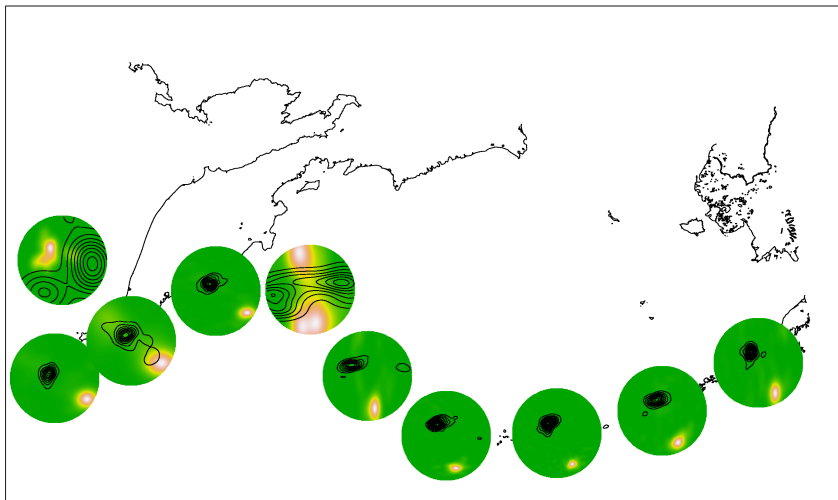
RTOMO

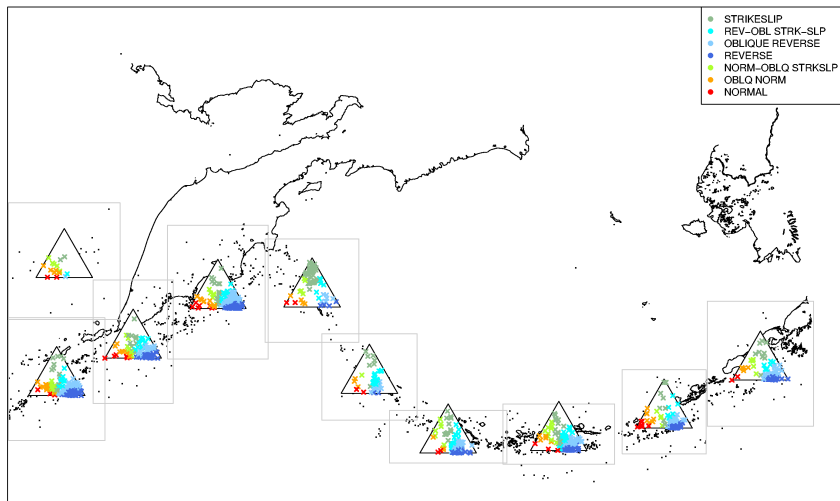


RTOMO









RFOC

