

Using mod_tomogrand

Tools/Tomo_Grand

To create models in SHaxi based on cross-sections through Steve Grand's 2002 tomography model (model TXBW) the first step is to create a base cross-section file using the scripts in the directory *Tools/Tomo_Grand*. The steps to do this are outlined below:

Decide on great circle arc to cut through the tomography model.

The great circle arc in the scripts is defined by an event, receiver pair. The scripts will draw a great circle through the pair and determine the values from Grand's model for this great circle path.

The parameters are:

evlat: Event latitude (deg)

evlon: Event longitude (deg)

stlat: Receiver latitude (deg)

stlon: Receiver longitude (deg)

The great circle arc can be checked using the provided GMT script *Plot_globe.csh*. Using the parameters:

evlat = -13.74

evlon = 291.21

stlat = 33.49

stlon = 243.33

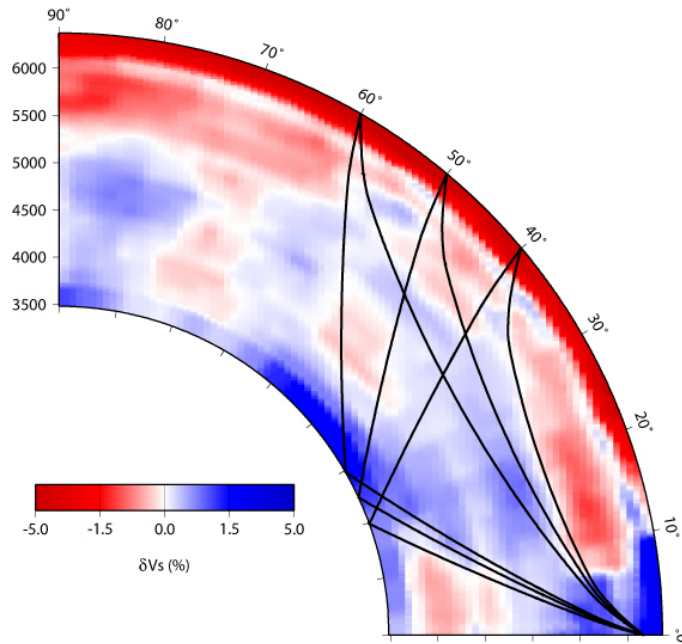
produces the following map:



Grand_Xsect.f90

The parameters (*evlat*, *evlon*, etc.) must be changed in the code *Grand_Xsect.f90*. Then the code can be compiled (*make*), and run (*./xsect.x*). The output of the code is a file called *Base_xsctn_grand2002*. This file contains the basic information that will be needed by SHaxi to produce the model. This is the only file SHaxi will require. To check the output of the base cross-section file, the script *Plot_xssect.csh* is an example

GMT script that can be used. The output plot for the above example should look something like this:



mod_tomogrand.f90

The only parameter in *mod_tomogrand.f90* that needs to be set is the variable *xfile*, which contains the name of the base cross-section file to use. This can be changed from the default filename *Base_xsctn_grand2002*.