

This README document describes the text files containing the global joint P-wave and S-wave velocity model (LLNL-G3D-JPS).

Reference:

Simmons, N. A., S. C. Myers, G. Johannesson, E. Matzel, and S. P. Grand (2015), Evidence for long-lived subduction of an ancient tectonic plate beneath the southern Indian Ocean, *Geophys. Res. Lett.*, **42**, doi:10.1002/2015GL066237.

Contact:

Nathan Simmons

simmons27@LLNL.gov

INTERPOLATED MODEL FILE DETAILS:

The actual model consists of P and S velocity values at the nodes defined by the spherical tessellation grid with a nominal spacing of 1 degree in the crust and upper mantle, and 2 degrees in the lower mantle. The "Interpolated" version of the model are velocity values interpolated to a regular 1-degree grid using our piecewise linear interpolation procedures within the triangular mesh (see Simmons et al. 2011, 2012).

The coordinates file "LLNL_G3D_JPS.Interpolated.Coordinates.txt" contains 4 columns of coordinates corresponding to the location of the velocity values in the model layer files, with the same ordering.

The columns in the coordinates file are:

[1-Geodetic(geographic) Latitude, 2-Longitude, 3-Geocentric Latitude, 4-Sealevel Radius (km)]

Each model file is named "LLNL_G3D_JPS.Interpolated.Surface.{n}.{Surface Descriptor}.txt". The ordering of the points is the same as in the coordinates file.

The columns in the model files are:

[1-Radius (km) 2-Depth (km) 3-Vp (km/s) 4-dVp (%) 5-Vs (km/s) 6-dVs (%)]

This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under contract DE-AC52-07NA27344. LLNL-MI-659327