Annual Report, 2000
on

Development of Version 2 of the 3D Velocity Model

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Development of the Version 2.2 Model

During 2000, the second version of the 3D velocity model was produced. The features that this model includes over the previous version (Version 1.0) are:

1) A Geotechnical Layer that provides estimates of velocities and densities in the top 200m of the model. These values are determined from shallow borehole data. The lateral interpolation of the values is controlled by the CDMS soils classification map.
2) A laterally varying Moho that is determined from a receiver function analysis of teleseismic waves recorded on the TriNet system.
3) A laterally varying background velocity derived from a tomographic analysis of local earthquake data recorded on the Southern California Seismic Network. This velocity function covers the region of the model outside of the basins. It is specified in Vp, and Vs and density being scaled to it.
4) The Imperial Valley. This part of the model is specified by iso-velocity layers.

The model was initially beta-tested as Version 2.0, and after a couple of rounds of bug fixes it has become Version 2.2. The model has been installed on the Data Center has has been downloaded and used by several groups interested waveform modeling.

A paper The SCEC Southern California Reference Three-Dimensional Seismic Velocity Model, by Magistrale, Day, Clayton and Graves, (BSSA, 90, 6B, Dec 2000, pp.S65-76) has been published on the model. This paper was written by the first author and edited by the others. This is SCEC contribution # 509.

The model is currently being revised to make it easier to use, compile and faster. This work will continue into the next year.