2D Version of TPV10 and TPV11
October 18, 2008

<u>**Contents:**</u>

1 Introduction

One of our objectives for TPV10 and TPV11 is to compare the results of 2D models with the results of 3D models on the fault center line. So, we invite modelers to submit results for the 2D version of TPV10 and TPV11, which we call TPV10-2D and TPV11-2D.

The 2D version consists of a planar slice through the 3D version, passing through the center line of the fault. The plane is located at 0 km along-strike. All the model parameters, initial stresses, material properties, nucleation patch, station locations, and so forth, are exactly the same as in the 3D version. The fault in the 2D version is a 60-degree dipping line. The 2D version has no motion in the along-strike direction (*i.e.*, all motion is within the plane).

If you want to submit results for both the 3D and 2D versions, please contact Michael Barall to obtain a second user account on the website. Use one of your accounts to upload 3D results, and use the other account to upload 2D results.

For the 2D version, you need to upload two kinds of files:

- On-fault time series files, which give slips, slip rates, and stresses for each on-fault station at each time step.

- Off-fault time series files, which give displacements and velocities for each off-fault station at each time step.

Note: There is no contour plot for the 2D version.

Direct questions to Michael Barall.

2 On-Fault Time Series Data Files

Please supply time-series data for the on-fault stations that are located at 0 km along strike. The stations are listed below.

Note that the website will offer you the option to upload files for stations that are not at 0 km along strike. Do not upload any files for those stations.

On-Fault Stations for TPV10-2D and TPV11-2D	
Station Name	**Location**
`faultst000dp000`	On fault, 0 km along strike, 0 km down-dip.
`faultst000dp015`	On fault, 0 km along strike, 1.5 km down-dip.
`faultst000dp030`	On fault, 0 km along strike, 3.0 km down-dip.
`faultst000dp045`	On fault, 0 km along strike, 4.5 km down-dip.
`faultst000dp075`	On fault, 0 km along strike, 7.5 km down-dip.
`faultst000dp120`	On fault, 0 km along strike, 12.0 km down-dip.

The file format is exactly the same as for the 3D version. **In the time-series file, please supply values of zero for the horizontal slip, horizontal slip rate, and horizontal shear stress.**

3 Off-Fault Time Series Data Files

Please supply time-series data for the off-fault stations that are located at 0 km along strike. The stations are listed below.

Note that the website will offer you the option to upload files for stations that are not at 0 km along strike. Do not upload any files for those stations.

Off-Fault Stations for TPV10-2D and TPV11-2D	
Station Name	**Location**
body-030st000dp000	-3.0 km off fault (near side), 0 km along strike, 0 km depth.
body-020st000dp000	-2.0 km off fault (near side), 0 km along strike, 0 km depth.
body-010st000dp000	-1.0 km off fault (near side), 0 km along strike, 0 km depth.
body010st000dp000	1.0 km off fault (far side), 0 km along strike, 0 km depth.
body020st000dp000	2.0 km off fault (far side), 0 km along strike, 0 km depth.
body030st000dp000	3.0 km off fault (far side), 0 km along strike, 0 km depth.
body-010st000dp003	-1.0 km off fault (near side), 0 km along strike, 0.3 km depth.
body-005st000dp003	-0.5 km off fault (near side), 0 km along strike, 0.3 km depth.
body005st000dp003	0.5 km off fault (far side), 0 km along strike, 0.3 km depth.
body010st000dp003	1.0 km off fault (far side), 0 km along strike, 0.3 km depth.

In the station names, the first number is the horizontal perpendicular distance from the station to the fault. A positive number means that the station is located on the **far side** of the fault.

The file format is exactly the same as for the 3D version. **In the time-series file, please supply values of zero for the horizontal displacement and horizontal velocity.**