

Gplivemodel::Dispersion curve tutorial

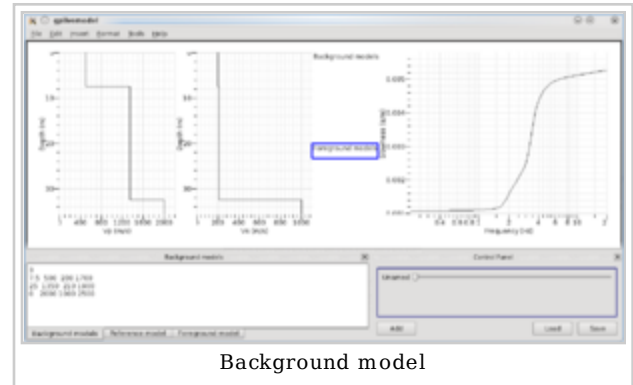
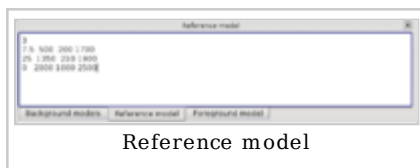
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First steps

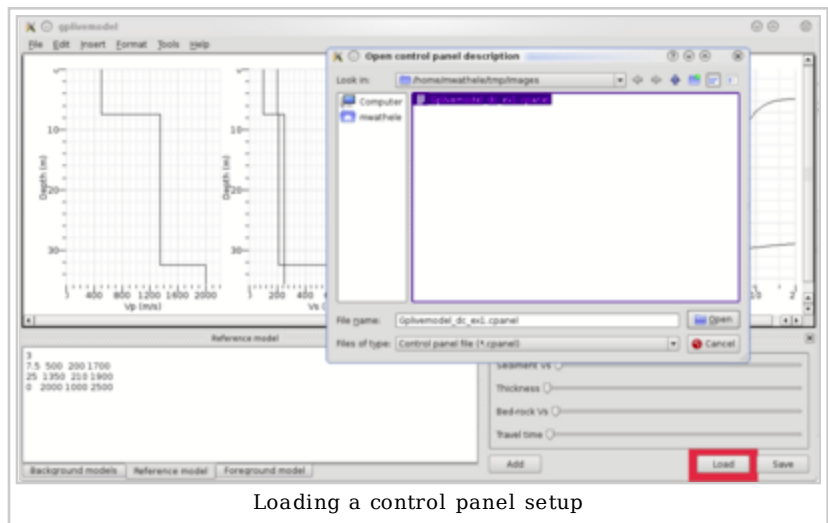
- Start *gplivemodel*
- Set this model as the background model:

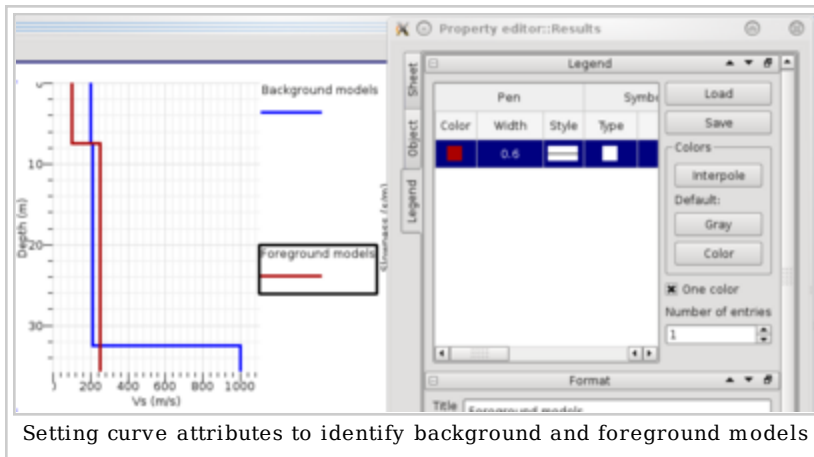
3			
7.5	500	200	1700
25	1350	210	1900
0	2000	1000	2500

- Set the same model as the reference model



- Load control sliders from this setup. By creating new sliders, the foreground model is generated from reference model (see *Foreground model* tab in bottom left pane). Two profiles are visible on the plots.





- Clearly identify background and foreground models by setting different colors for background and foreground models. Double click on legends located on the left of the dispersion curve plot. In the legend properties, set at least one entry for each legend. Adjust colors and other attributes to your taste.
- Play with slider controls. You may eventually freeze axis limits by unchecking option *Automatic limits* in menu *Format*. Set *Sediment Vs* and *Travel time* to their minimum value, and *Thickness* and *Bed-rock Vs* to their maximum before freezing limits. This way you get the largest ranges for axis values.

Slider definition

This section details the content of the slider control setup loaded in the previous section. Right click on any of them and select *Edit* to view or edit the attached code.

- Sediment Vs

```
vs[0]=100+p*400;
```

- Thickness

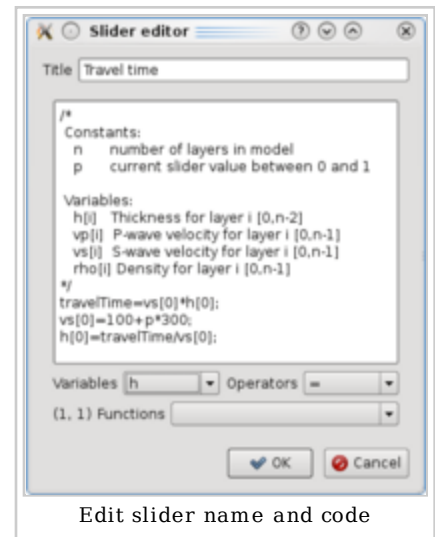
```
h[0]=5+p*50;
```

- Bed-rock Vs

```
vs[2]=250+p*1000;
```

- Travel time

```
travelTime=vs[0]*h[0];
vs[0]=100+p*300;
h[0]=travelTime/vs[0];
```



Click on *Add* button to create your own slider. *Save* button lets you save the current list of slider controls as a '.cpanel' file.

Type of curve

By default the fundamental mode of Rayleigh wave is computed. To switch to higher modes or Love modes, command line options at *gplivemodel* startup must be added (from a terminal, a MS-DOS console or a MSYS (http://www.mingw.org/wiki/msys) terminal)

- Fundamental Love mode only

```
gplivemodel -L 1 -R 0
```

- Rayleigh fundamental and first higher mode

```
gplivemodel -R 2
```

- Love fundamental and first higher mode

```
gplivemodel -R 0 -L 2
```

- Rayleigh fundamental group velocity

```
gplivemodel -R 1 -group
```

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