

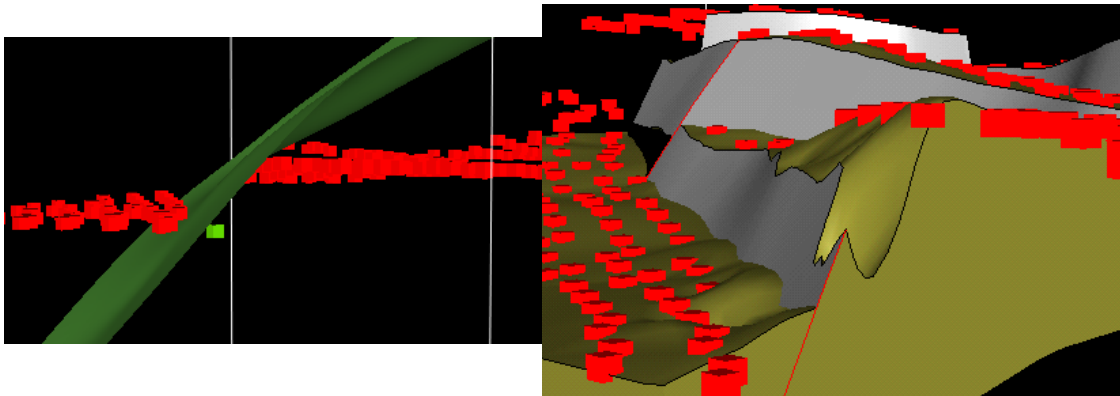


Fault Tolerance

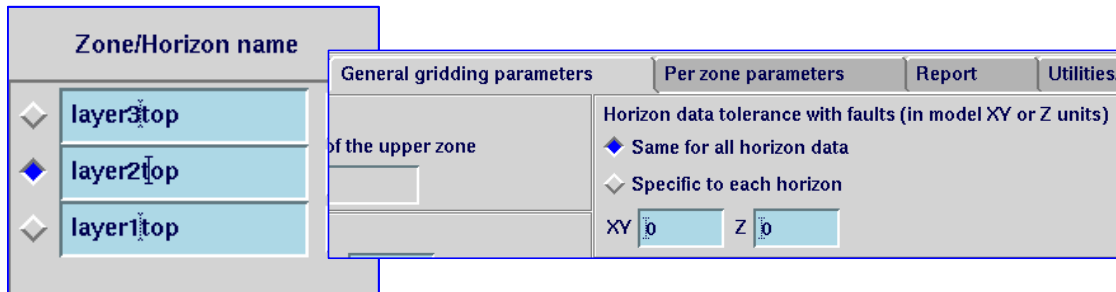
Horizon Gridding Project Paper V

In the gathering and interpretation of data, there are often errors and the result is that sometimes data falls on the wrong side of faults. In the following image, there is a green fault surface with red data that lie on either side of that fault. There is, however, one green data point that is clearly associated with the lower level of data but it is on the wrong side of the fault.

If you try to grid this data, the green point will pull down the surface on the right and this effect is shown in the image below on the left.



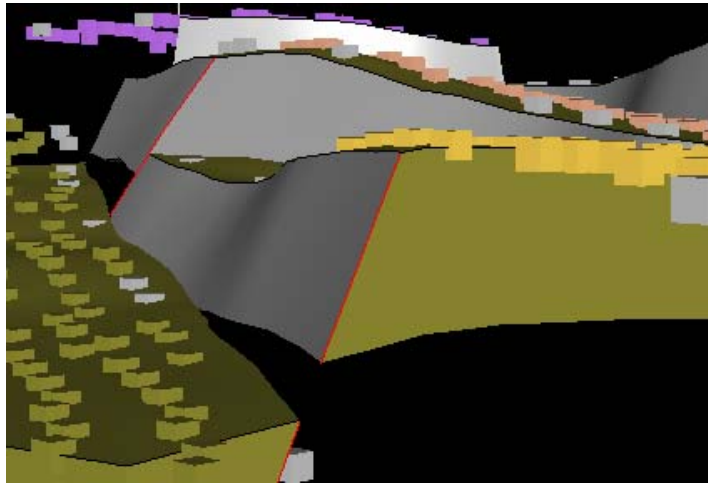
One option would be to manually edit all these errant points out of the data set but sometimes it is more practical to have the program remove data that lies very close to a fault. Undoubtedly some good data is removed but the bad data is also removed. This is done by specifying a "Fault Tolerance" set of values. These values are found in the WorkFlow Manager on the **Stratigraphic Sequence and Horizon Modeling** menu on the **General Gridding Parameters** tab:



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The values are specified as an XY-distance and a Z-distance. The units for each are the units of the model. Also these can be specified for an individual horizon or for all horizons (default). Any horizon points that fall within this tolerance of the faults are excluded from the horizon gridding process. Horizon data, adjustment data, and any additional data are all filtered with this parameter.

Here is an image of the same horizon after this errant point is removed by using the fault tolerance:



Notice that in the above image, the data points that have been filtered out due to the fault tolerance are colored in gray. To get this version of the data file that shows the filtered data, you must manually load it from the following directory:

```
<ProjectDirectory>/<ProjectName>.temp_label/
```

So for example if your project name is "Bermuda," the directory would be:

```
Bermuda/Bermuda.temp_label/
```

In this directory the data files are labeled using the horizon names.

Note: In models with bounding fault polygons, data within the polygon and in a small buffer zone around the polygon are filtered but not data outside of those regions. The buffer zone around the polygon is the width of the XY tolerance value.

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