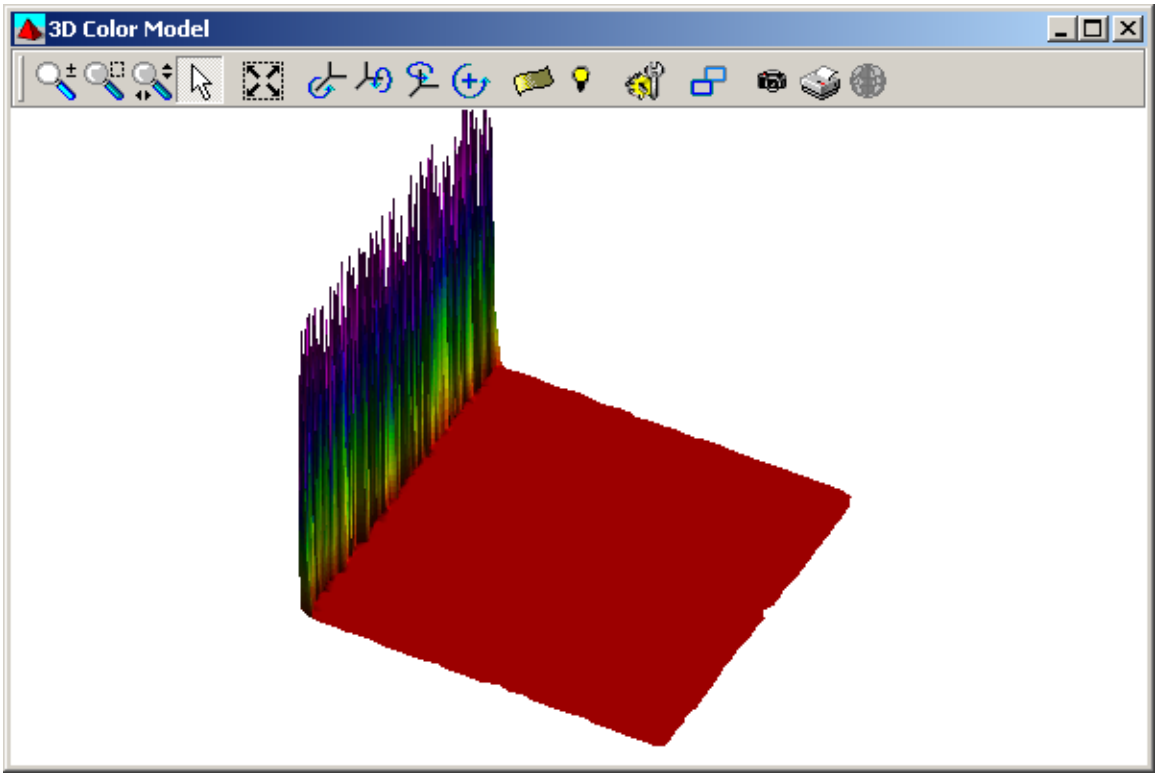
Handling a Vertical Wall in TIN MODEL

by Lazar Pevac

The Delaunay algorithm that is widely used to generate a Triangular Irregular Network (TIN model) is “depth blind”. This means that the algorithm will produce the same result for two sets of data that have an identical projection to 0xy. We will not notice any problem as long as we deal with data that does not contain a vertical wall.

Let’s look at an example that contains points randomly spaced in horizontal squares (0,0,0), (100,0,0), (100,100,0), (0,100,0) and (0,0,0), (0,100,0,), (0,100,100), (0,0,100).

FIGURE 1. *Original TIN Model to the Sample Data Set*



Obviously, the algorithm failed to produce a satisfactory model along the vertical wall. The TIN MODEL program in the HYPACK® 2012 release allows you to solve such a problem in certain situations.

A new “Edit 3D TIN” option gives you a chance to manipulate the TIN model in a separate window until you get a satisfactory result.

FIGURE 2. *Accessing the Edit 3D TIN Window*

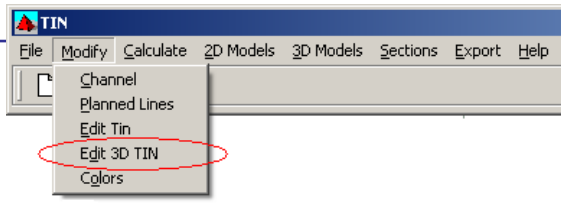
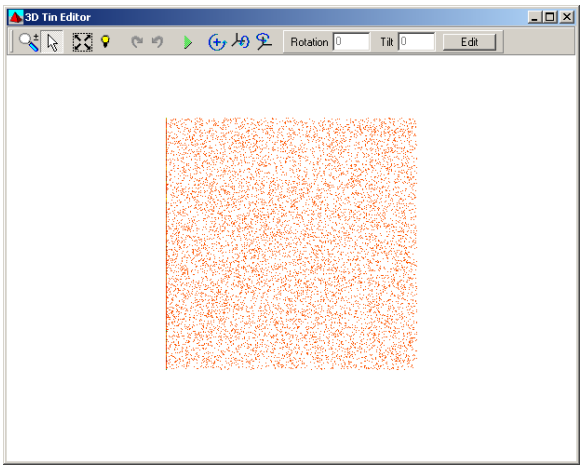


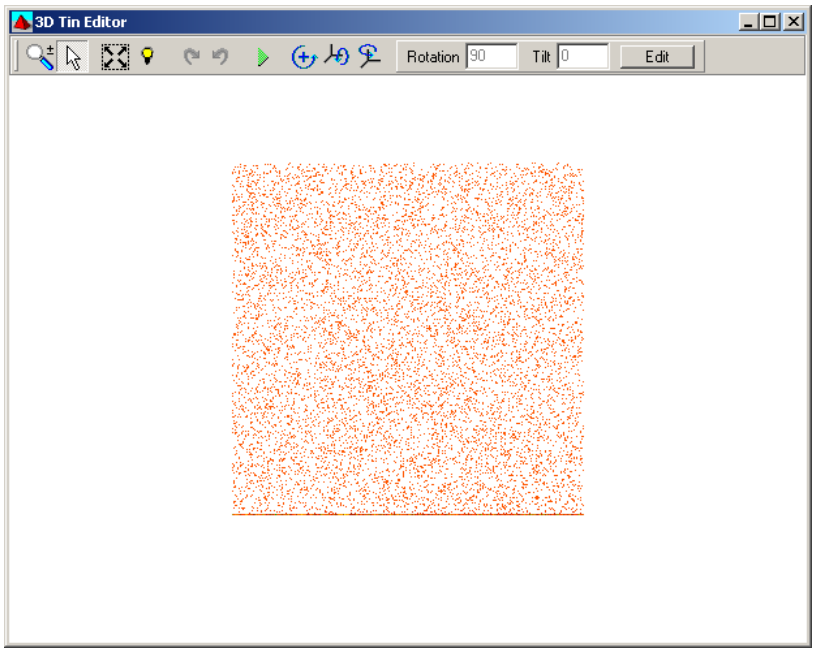
FIGURE 3. *Original Data in the 3D TIN Window*



It is very useful to follow these steps.

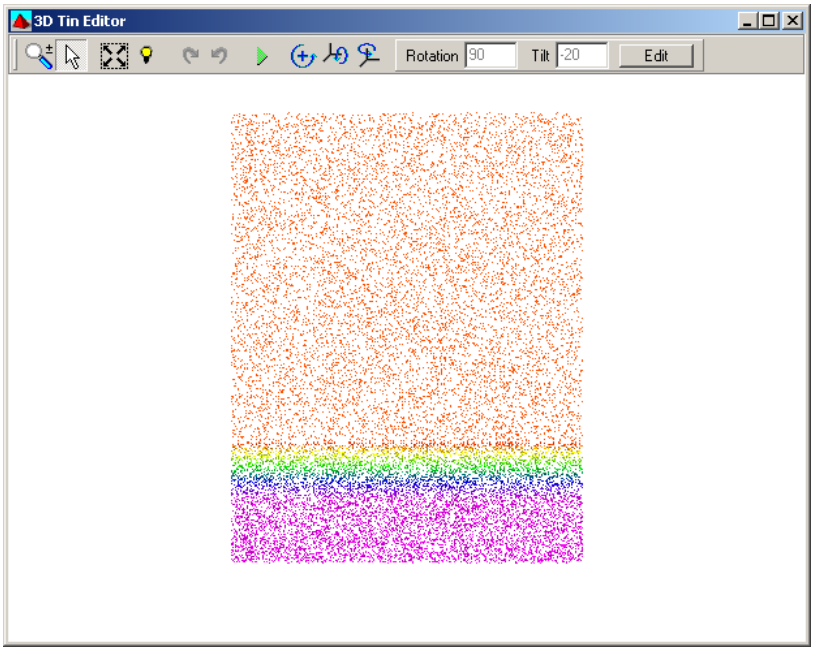
1. **Align the vertical wall horizontally** using the rotation angle or  button.

FIGURE 4. *Step 1*



2. **Tilt data until the vertical wall becomes clearly visible** using tilt angle or  .

FIGURE 5. Step 2



3. **Regenerate the TIN**  .

FIGURE 6. Step 3

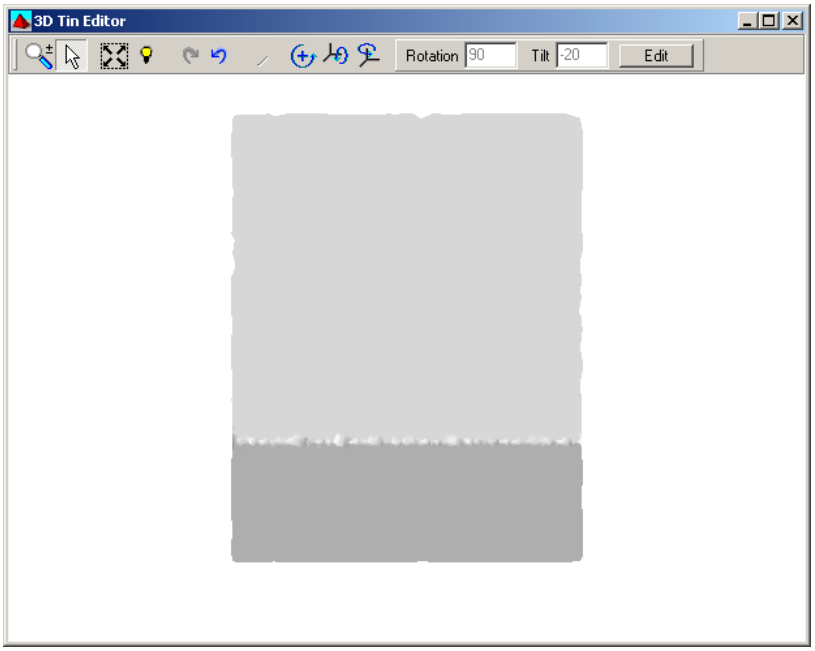
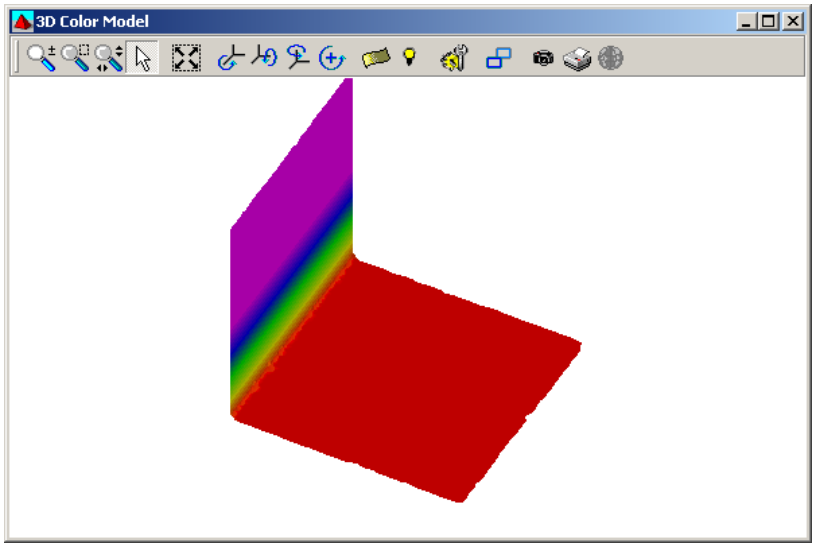


FIGURE 7. Final Model



If you are not happy with the model  will undo changes.

FIGURE 8. Real Data Example—Original TIN (left), Modified TIN (right)