



# A New Clipping Algorithm and New Features in TIN MODEL

By Lazar Pevac

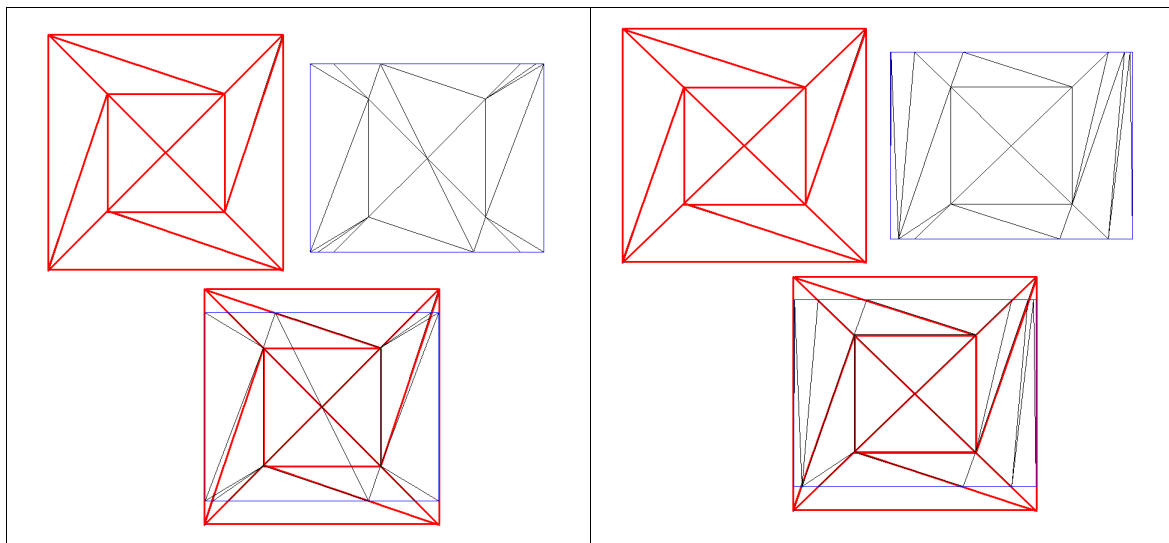
We received many complaints about slight volume discrepancies in TIN MODEL vs. border/channel calculation. It appeared that the total volume over a certain area does not exactly match the sum of the volumes over sub-areas.

It was a significant difference in cases where the source was a single beam data set. Our temporary solution was to grid data first and then calculate the volume. It corrects the problem, but it required an additional step.

The permanent solution was to improve the TIN MODEL clipping algorithm. Our new approach leaves the original TIN geometry intact. It creates new triangles, but every new triangle is part of an original triangle. This way, the total volume must match the sum of the sub-volumes.

Next two pictures present the original TIN model, the clipped TIN, and the overlapped picture of the previous two for each algorithm.

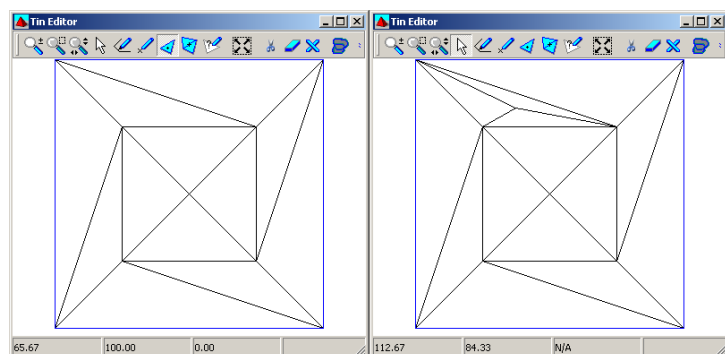
**FIGURE 1.** Old Clip Algorithm(left) New Clip Algorithm (right)



We also added a few new options in the TIN Editor.

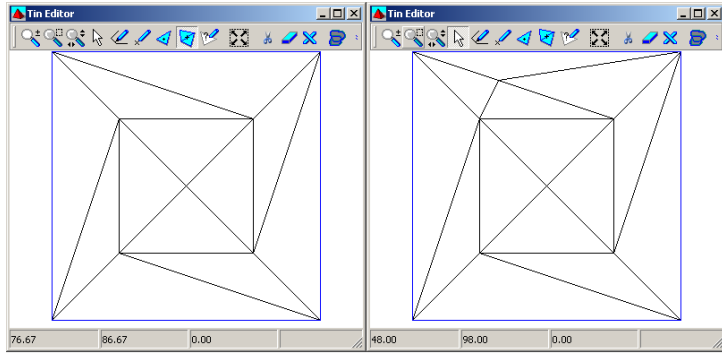


- allows you to insert new point in the triangle





- allows you to insert new point in the segment.



- gives you triangle info (nodes and neighboring triangles)

