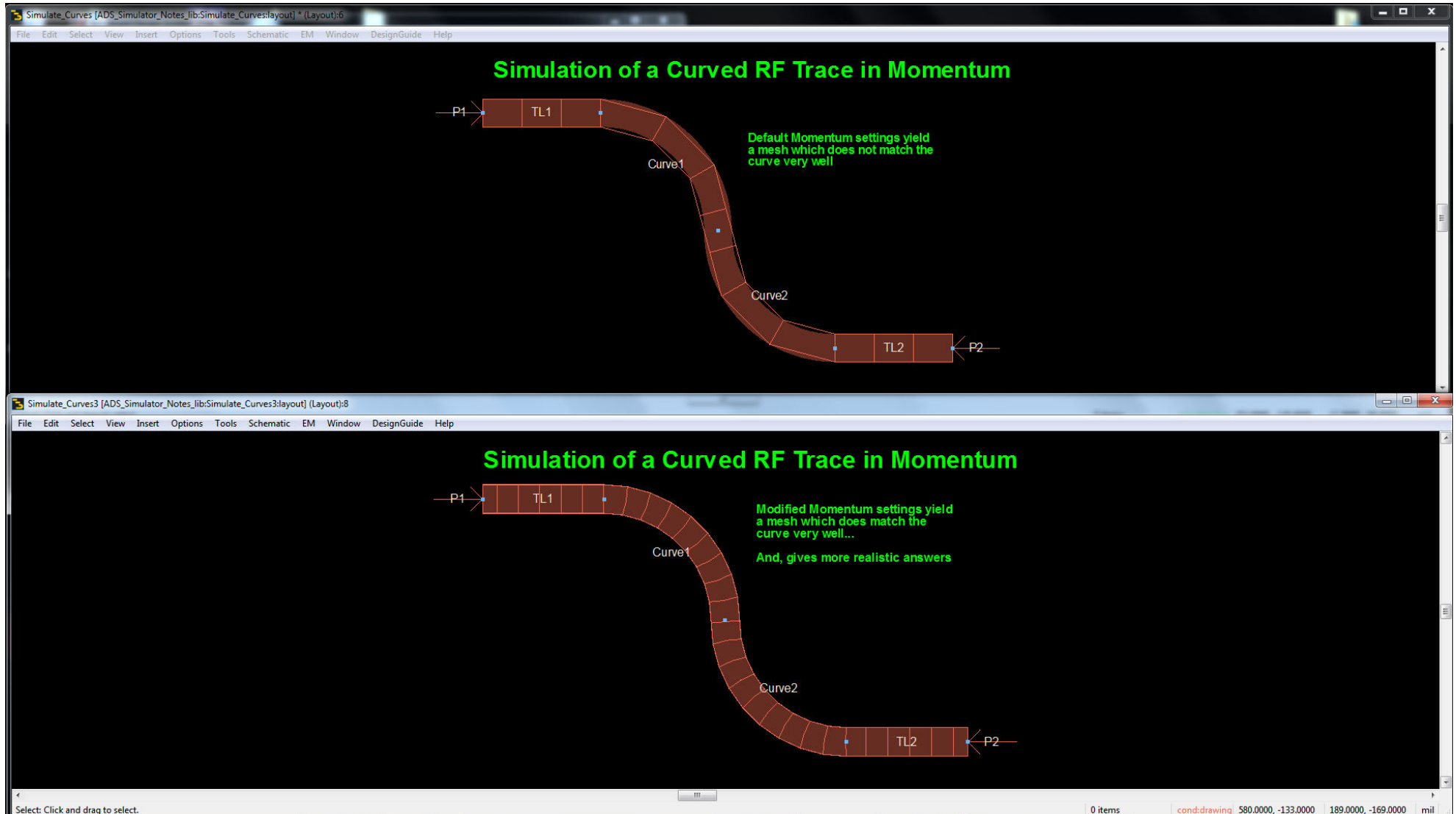


The Keysight Advanced Design System (ADS) **Momentum** Electromagnetic Simulator Has Default Settings Which Trade Off Simulation Time For Simulation Accuracy - You Have To Start Off Somewhere, Right?

However, the default settings are not always best when it comes to obtaining accurate results. As shown in the plot below, the default mesh chosen by Momentum is quite coarse relative to the actual RF Trace artwork.

If more accurate results are desired, some adjustments to the simulation need to be made.



As shown by the red plot to the right below, the simulated return loss result for the coarsely meshed default RF Trace is overly optimistic.

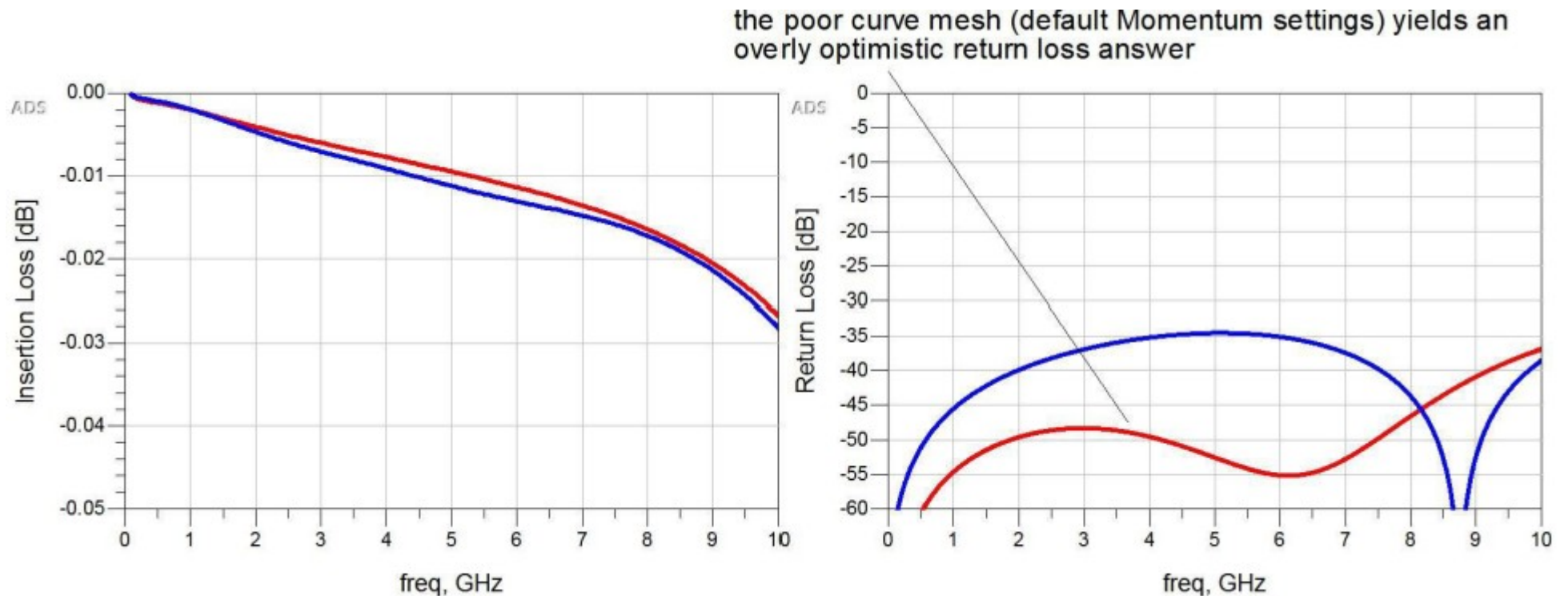
For these particular simulations, the return loss is very low. So, the results may not significantly impact an overall cascaded circuit simulation.

However, this is just an illustration. For another geometry, the simulator default settings may yield much worse simulation results.

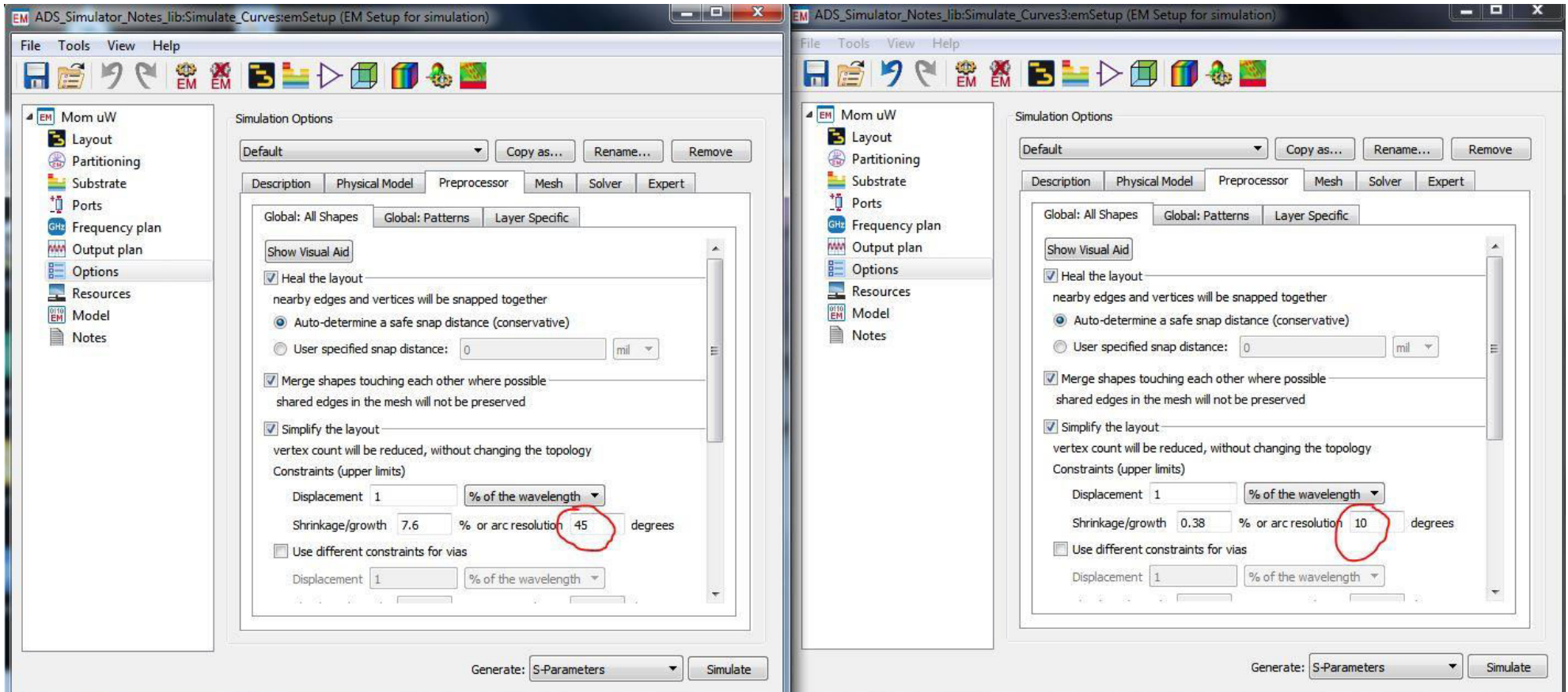
The point is that for **ANY** high frequency electromagnetic RF simulations, one should **ALWAYS** compare default simulator setting results to more stringent simulator setting results.

This is true whether the Electromagnetic Simulator is “2.5D” or “3D”.

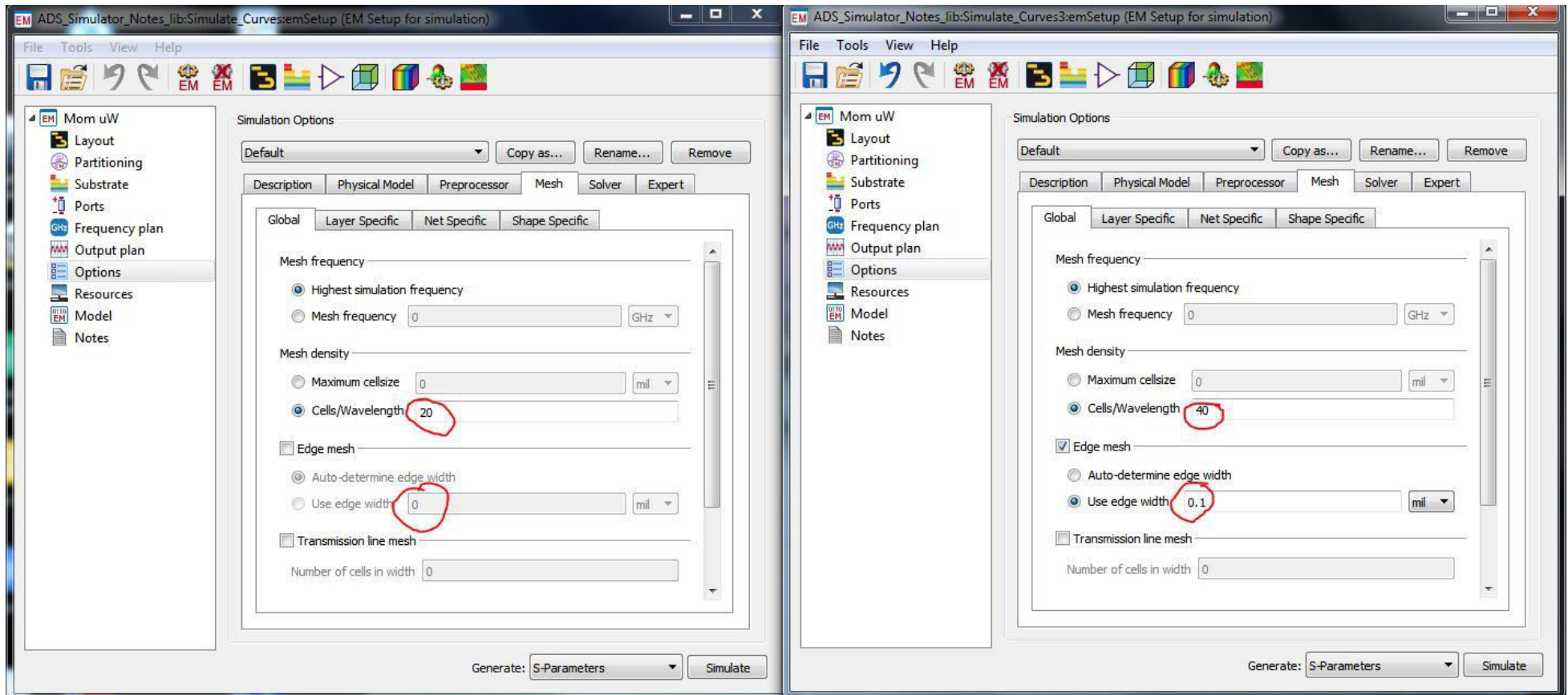
If you do have the luxury of having access to both 2.5D and 3D high end simulators, one should also **ALWAYS** compare 2.5D results versus 3D results for critical circuit applications.



The default Arc Resolution of 45 degrees is set too high...set it lower to 10 degrees as shown on the right:



The default mesh settings on the left are not set properly for the curved trace...adjust them as shown on the right side:



Conclusion: Using the default Momentum settings yields faster but possibly more inaccurate results.

As with all Electromagnetic Simulators, it is necessary to spend a considerable amount of time familiarizing yourself with and adjusting simulator settings in order to find the settings which yield the best trade-off between simulator accuracy and simulation time.

Other Advanced Design System Examples can be found at <https://bbt-line.com/ads-examples/>