In this test, a model file was created which had the same format as the unified_slbm.txt model but where the velocity model reflected the IASP91 P wave velocity model. The velocity and gradient at the top of the model were set to 8.03 km/sec and 0.00011 1/sec to reflect conditions in the iasp91 model. The earth was defined to be spherical to be consistent with the iasp91 model. Travel times were computed using libslbm and using the TauP Toolkit (Crotwell et. al.). Results are compared in Figure 1.

At close distances, less than about 1.2 degrees, TauP has Pg coming in first, while SLBM is computing Pn. At distances greater than 15 degrees, TauP is coming in faster because it is sensing the increase in gradient in the iasp91 model at a depth of 120 km. SLBM cannot sense that change in velocity since it only has a single velocity gradient for the whole mantle.

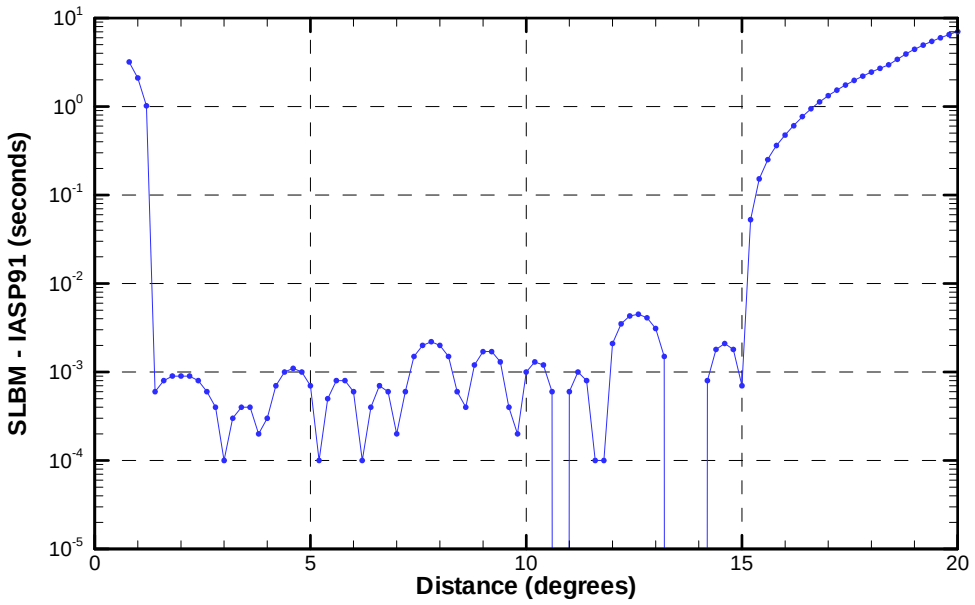

Figure 1 – Difference in travel time for SLBM vs TauP Toolkit for the IASP91 P velocity model.