



Figure S1. Improvement of (a) accuracy and (b) sensitivity fit for the 0 rad meridian with refinement of the v model grid by a factor of 2. In (a) the purple line marks the accuracy for the grid used in the synthetic tests in this paper as a reference for comparison with the orange line indicating the accuracy achieved using a refined grid. The refined average relative traveltime misfit is $0.64\% \pm 0.08\%$ compared to the $0.8\% \pm 0.1\%$. In (b) the comparison is established among the blue line marking the

analytic sensitivity as a reference, and the sensitivities for the grid that we used (orange line) and the refined grid (yellow line). The refined grid reduces the relative traveltime misfit and produces a better fit of the analytic sensitivity.