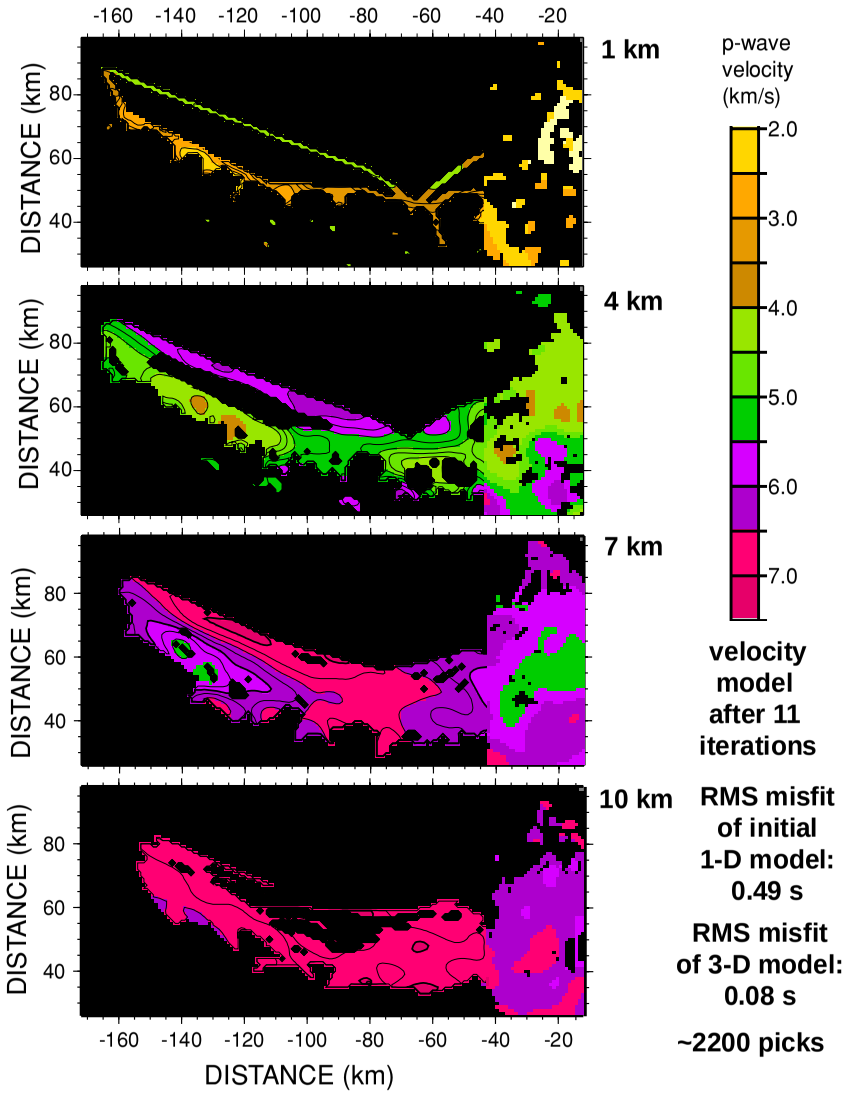

Figure 5. 3D inversion of first arrivals from shots in the Straits of Juan de Fuca recorded on stations along the northern Olympic Peninsual. East of km 40, the model is from Brocher et al. (in review) and contains data from additional lines. Note the contrast in the velocity above 7 km between the two lines of shot, indicating a linear basin parallel to the Strait.

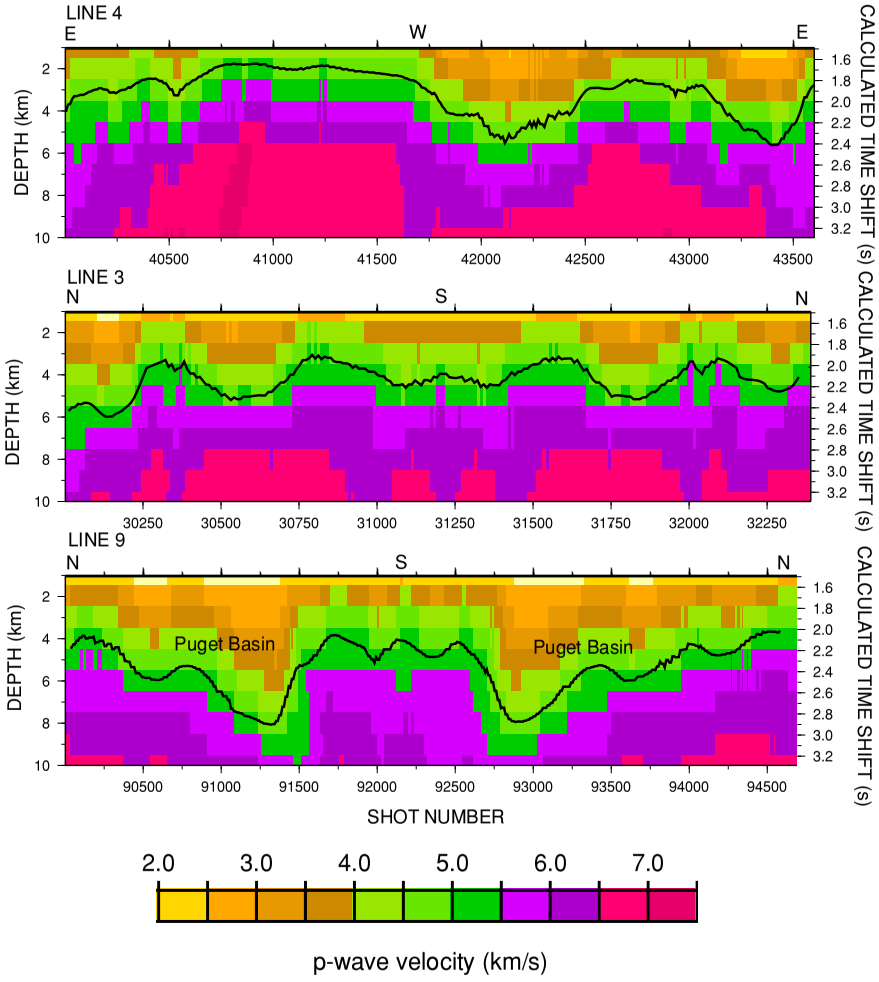

Figure 6. Velocity in the upper 10 km along each line of shots used in the 3D PmP inversion. For the Straits of Juan de Fuca, the model of figure 5 was used. For Hood Canal and Puget Sound, the model of Brocher et al. (in review) was used. The travel-time through this structure is also shown. These times were used to project shots to a depth of 10 km in the model for the 3D moho inversion, permitting use of a 5 km grid spacing.

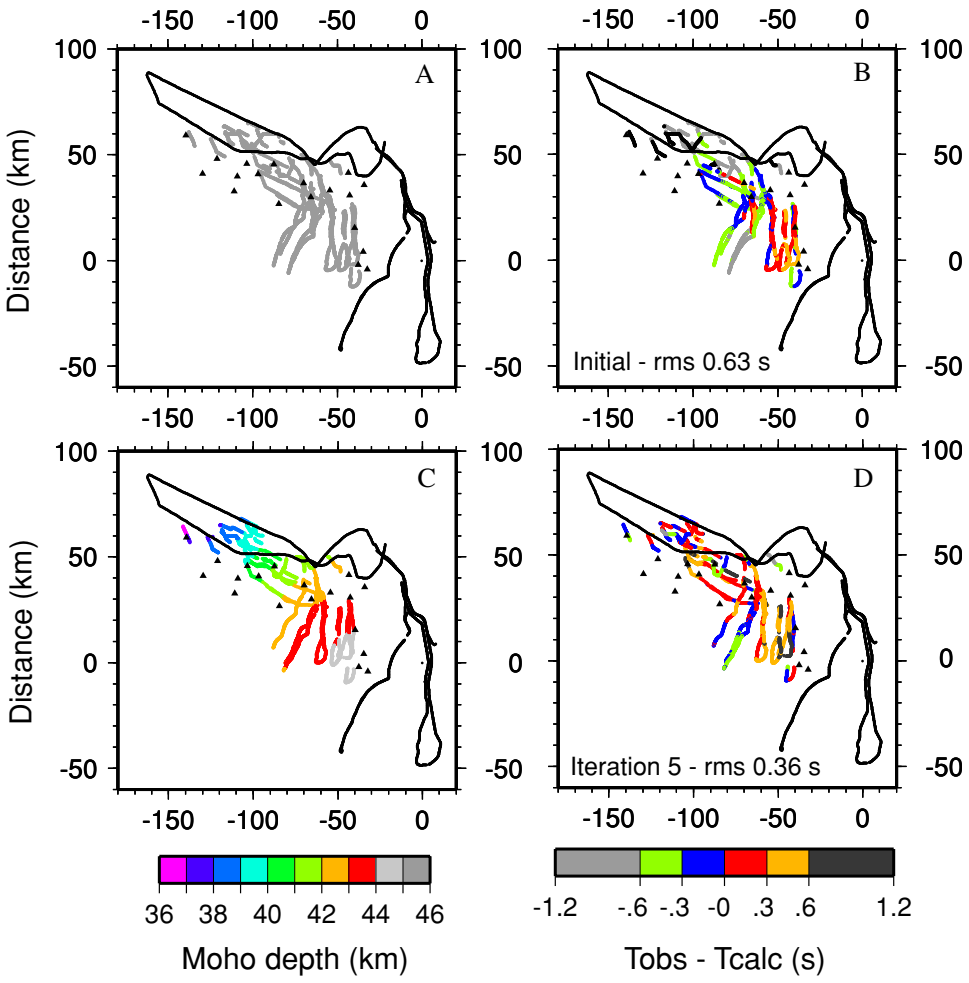

Figure 7. Initial Moho model (A) and travel-time misfit (B) and Moho model and misfit after 5 iterations (C and D). Most of the misfit reduction occurs during the first 2 iterations. Because data are not fit to within the picking uncertainty, other systematic sources of error, such as velocity variations in the lower crustal are likely to be important.

The model indicates a SE dipping Moho, with dip of ~7 degrees. Relatively large misfits at the SE reflection points suggests that dip increases in this region but that stiffnes constraints in the inversion are too strong.

Current efforts are focussed on improving the lower crustal velocity model and increasing coverage to the east.

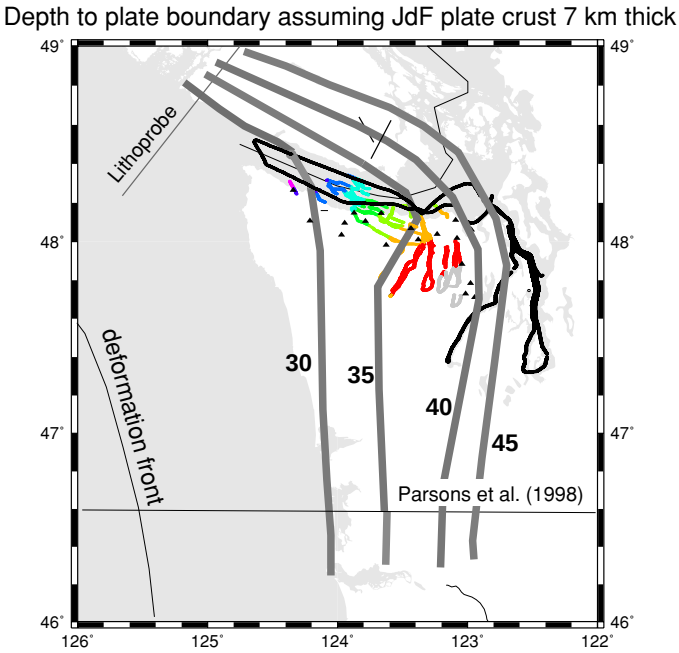

Figure 8. Comparison of preliminary results from PmP inversion with Lithoprobe results in British Columbia and results of Parsons et al. (1998) in southwest Washington. The apparently sharp bend in the 35 km depth contour is probably an artifact, and plate dip and depth are probably underestimated east of 123.5W. None-the-less, the results confirm earlier reports of an arch in the subducting plate beneath the Olympic Peninsula, but suggest that the arch is assymetric, with the plate dipping more steeply beneath Vancouver Island than to the east beneath Washington, at least at these depths.