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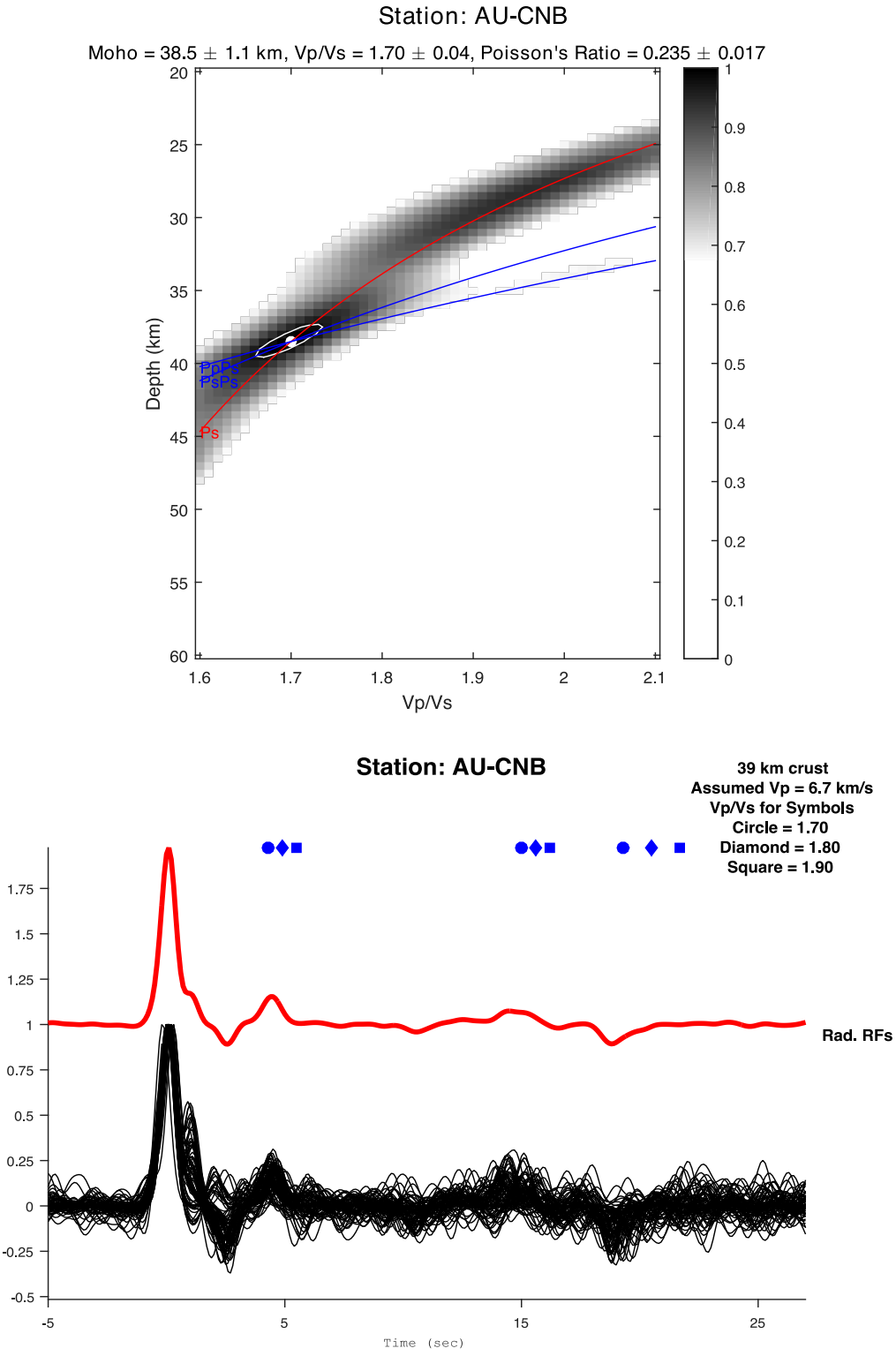
Introduction

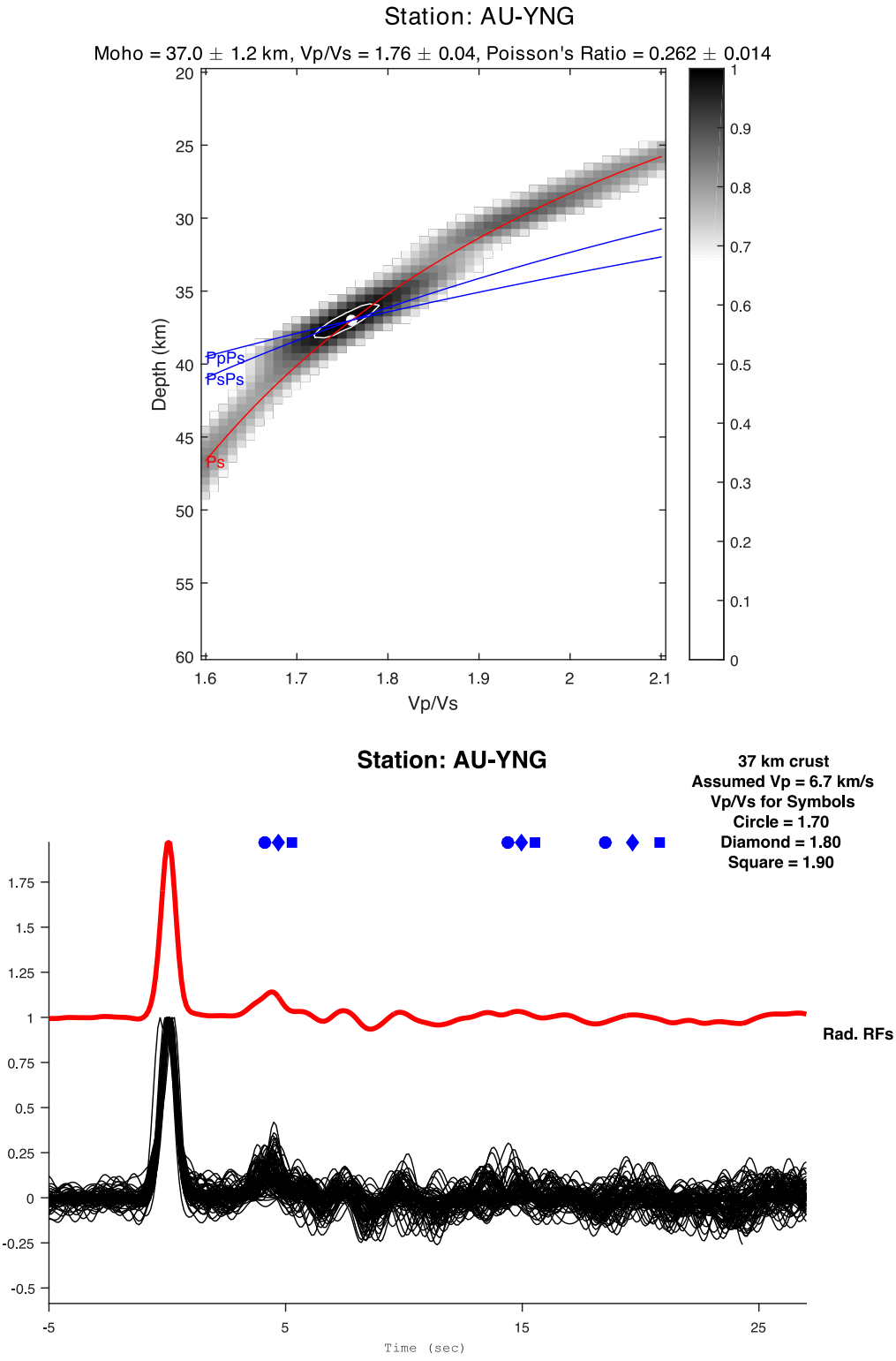
This supplementary material presents individual receiver function stacks and 1-D NA inversion results that are not presented in the main text.

H-κ stacking analysis

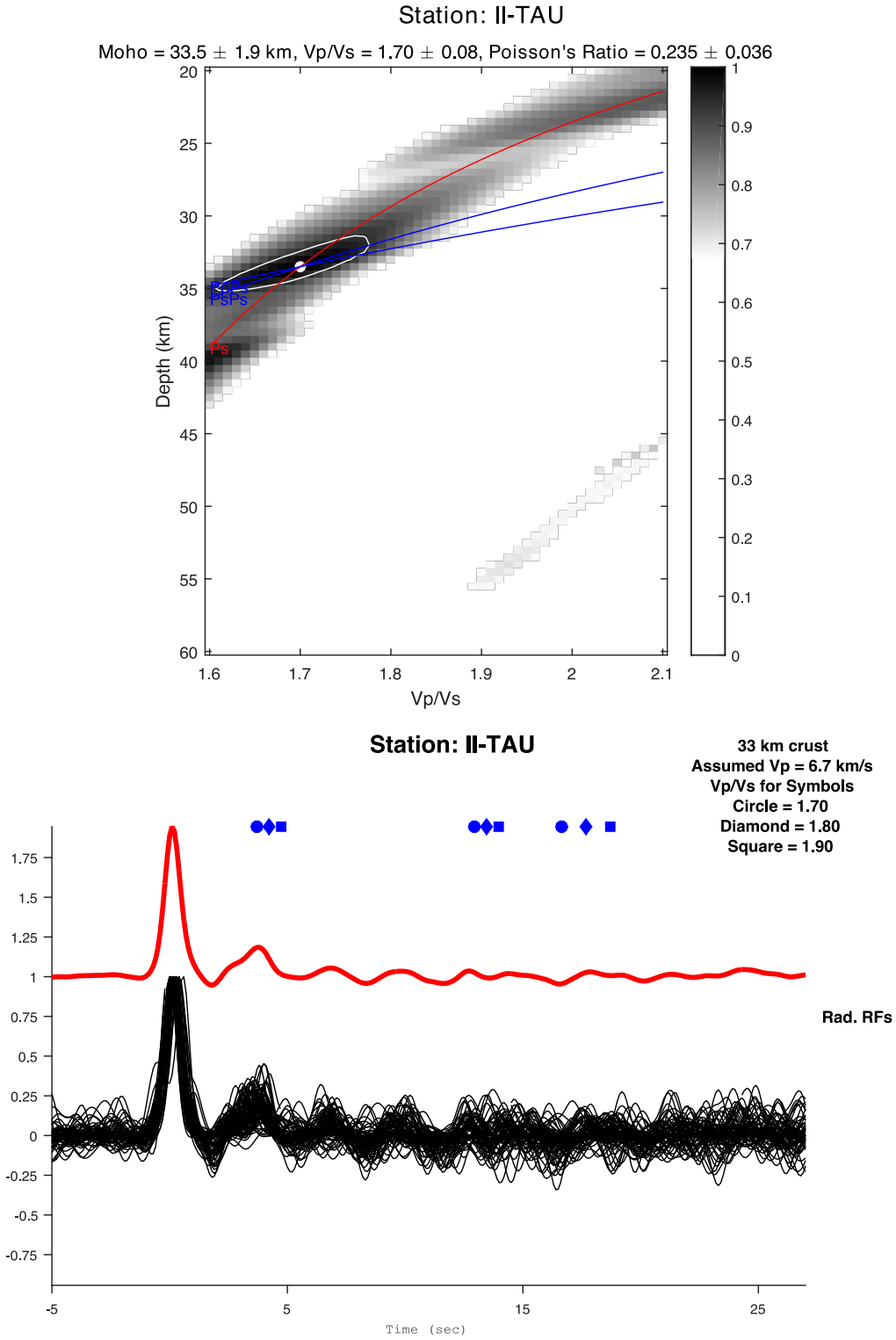
In this section, results from the H-κ stacking analysis for RFs at stations CNB, YNG, TAU, MILA, BA08, BA11, BA13, BA17 and BA02 are presented. In each case, the top panel represents the normalised amplitudes of the stack over all back-azimuths along the travel time curves corresponding to the P_s and $P_pP_s + P_sP_s$ phases. The bottom figure is the corresponding stacked receiver function for the station.



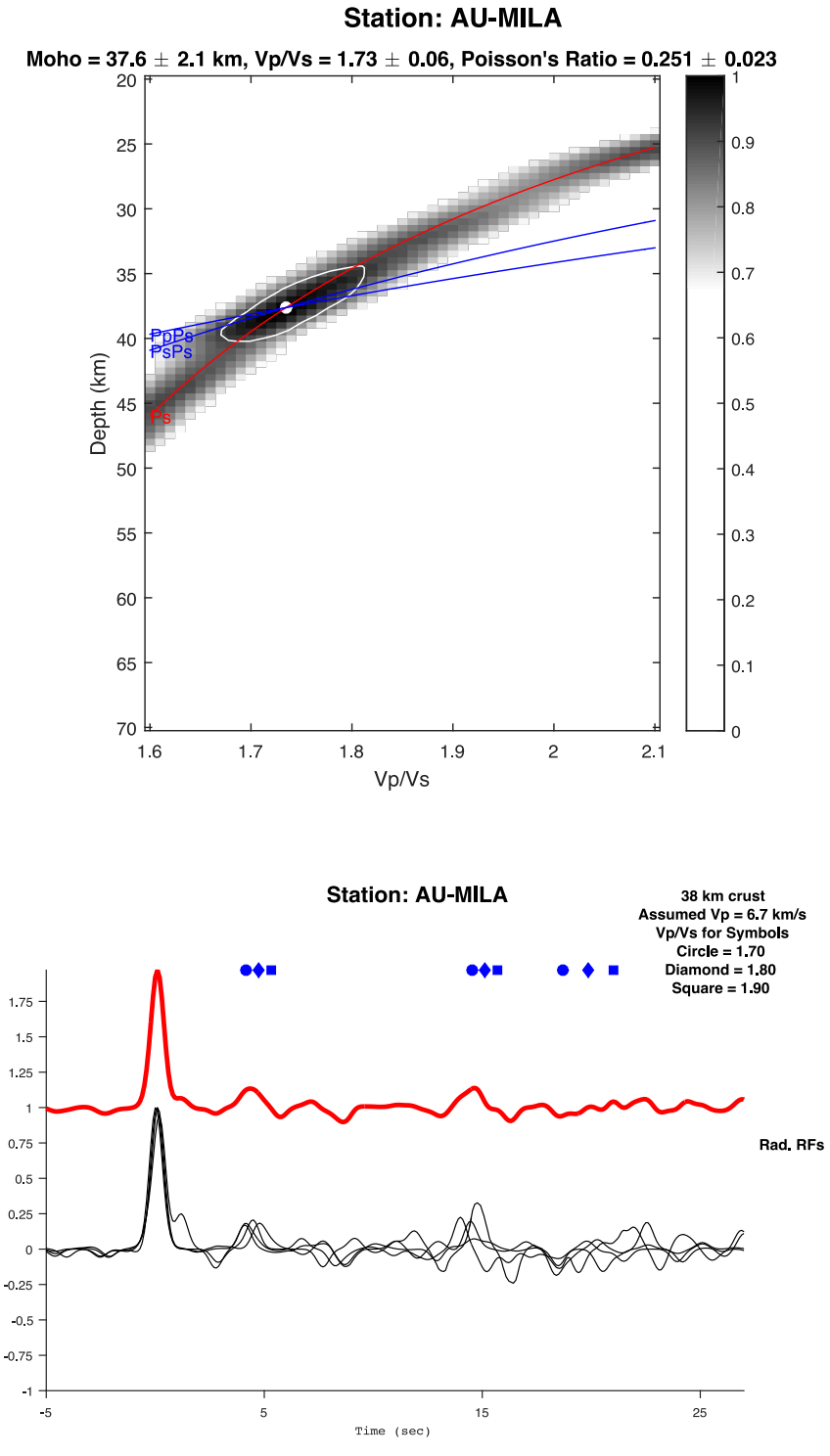
S 1: Result from the H-κ stacking analysis for RFs at station CNB.



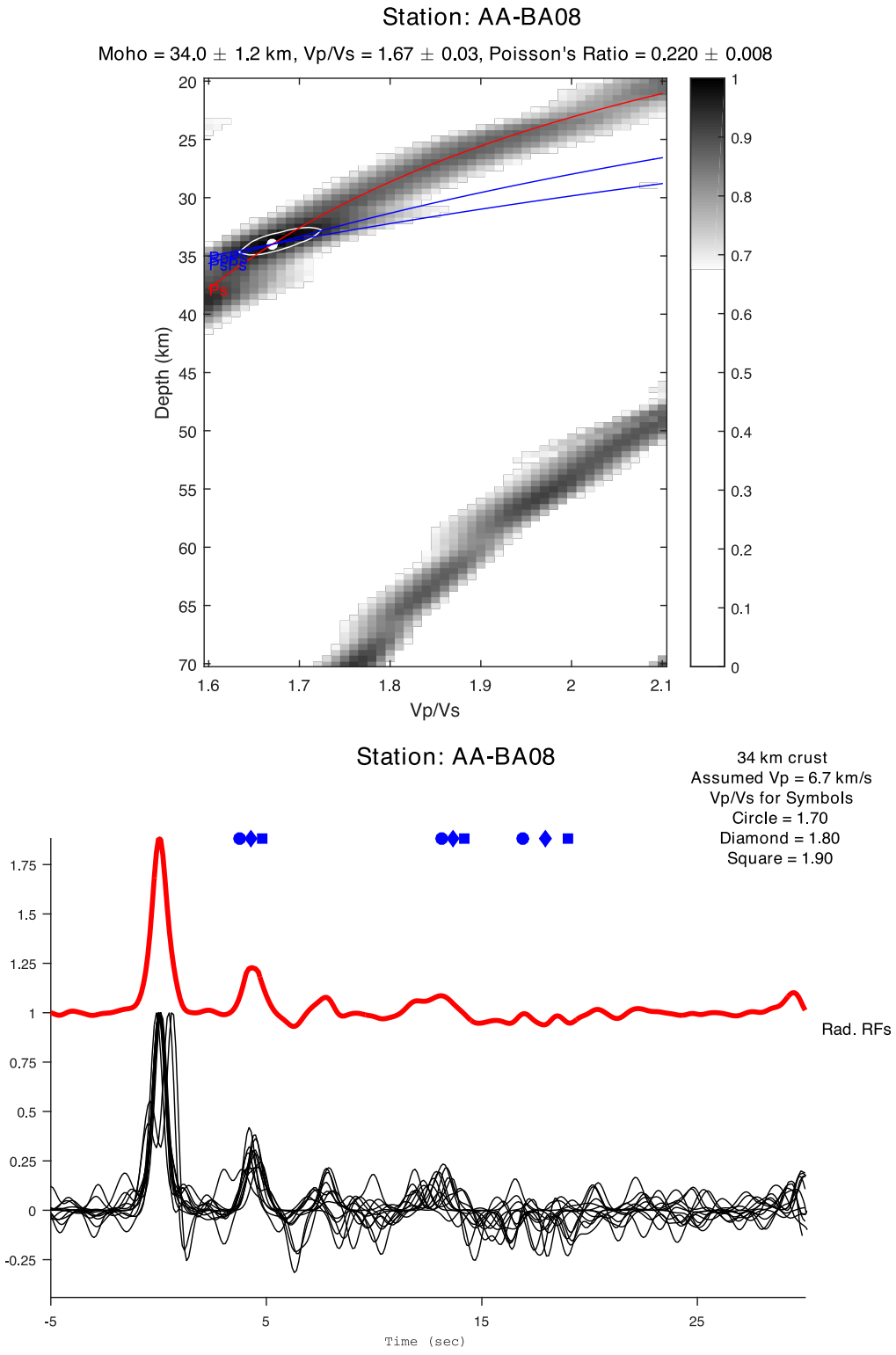
S 2: Result from the H-κ stacking analysis for RFs at station YNG.



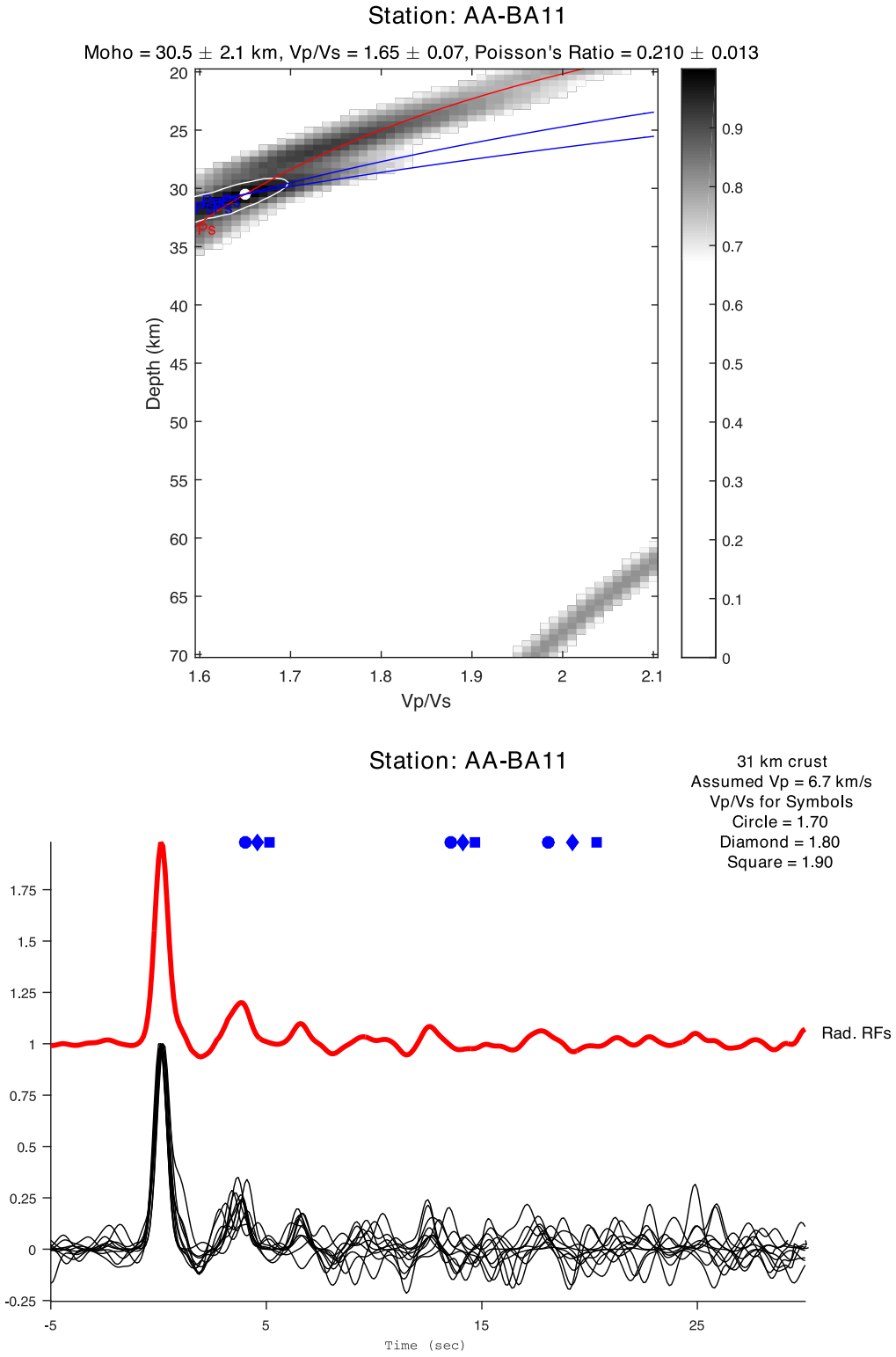
S 3: Result from the H-κ stacking analysis for RFs at station TAU.



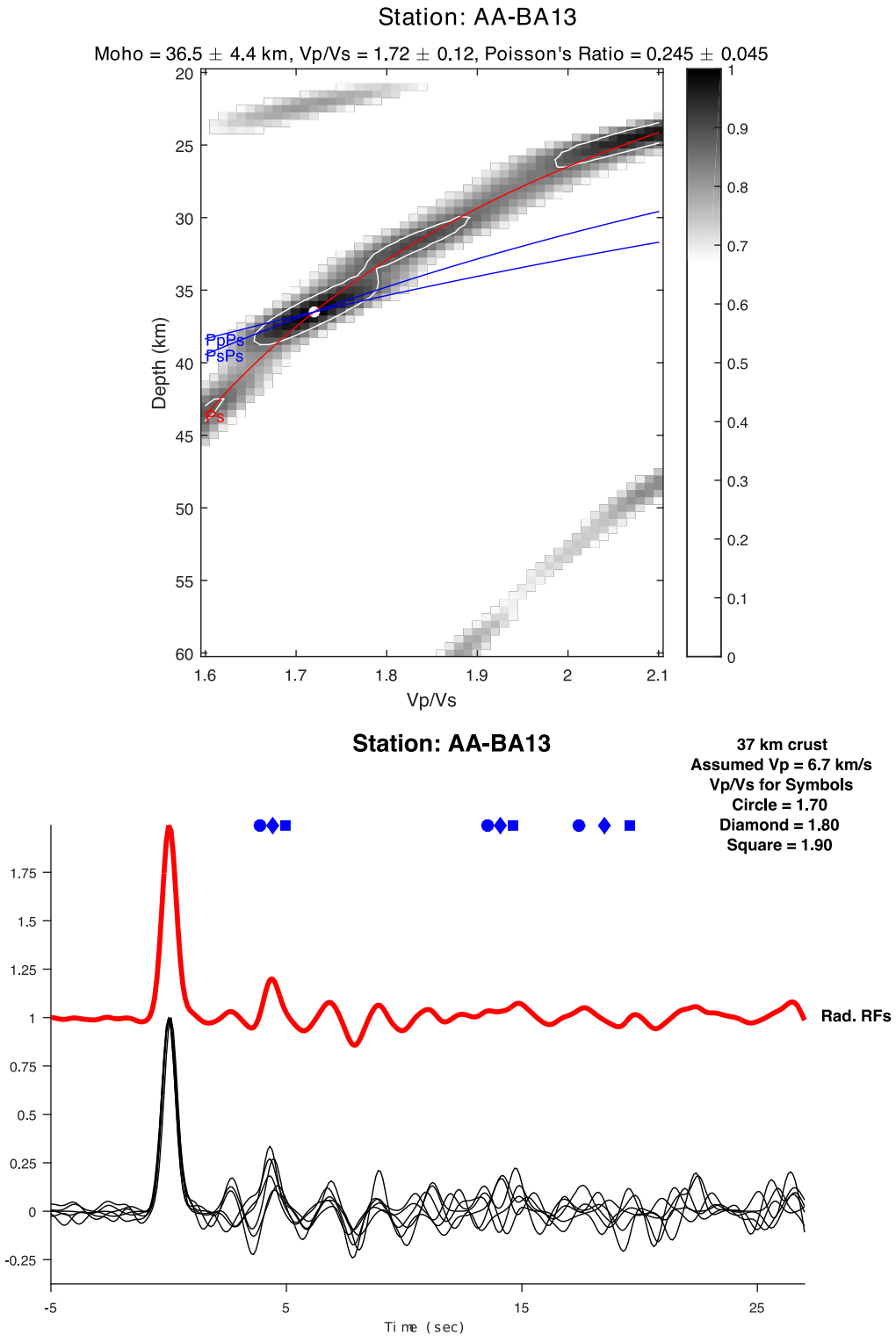
S 4: Result from the H-κ stacking analysis for RFs at station MILA.



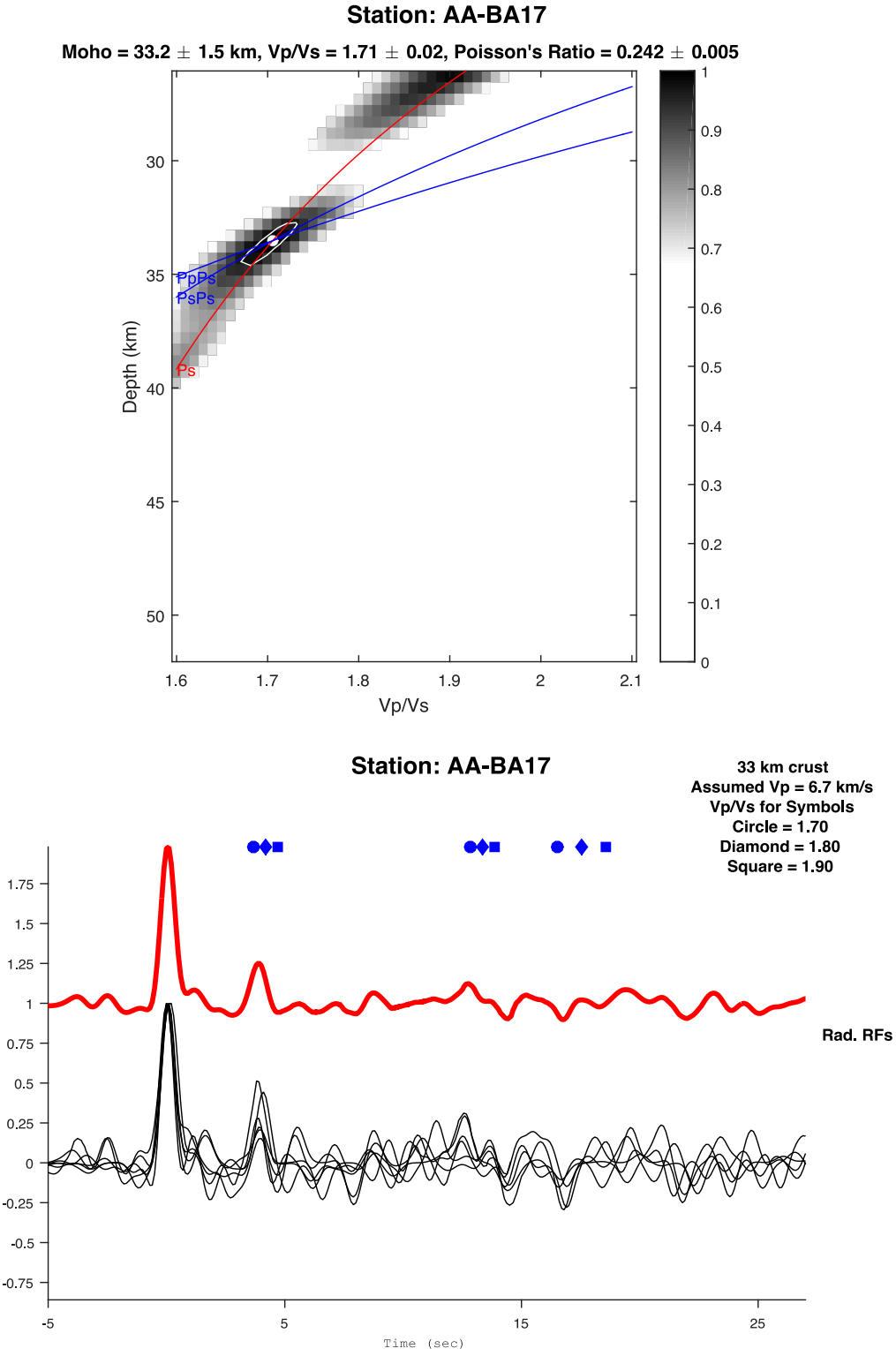
S 5: Result from the H-κ stacking analysis for RFs at station BA08.



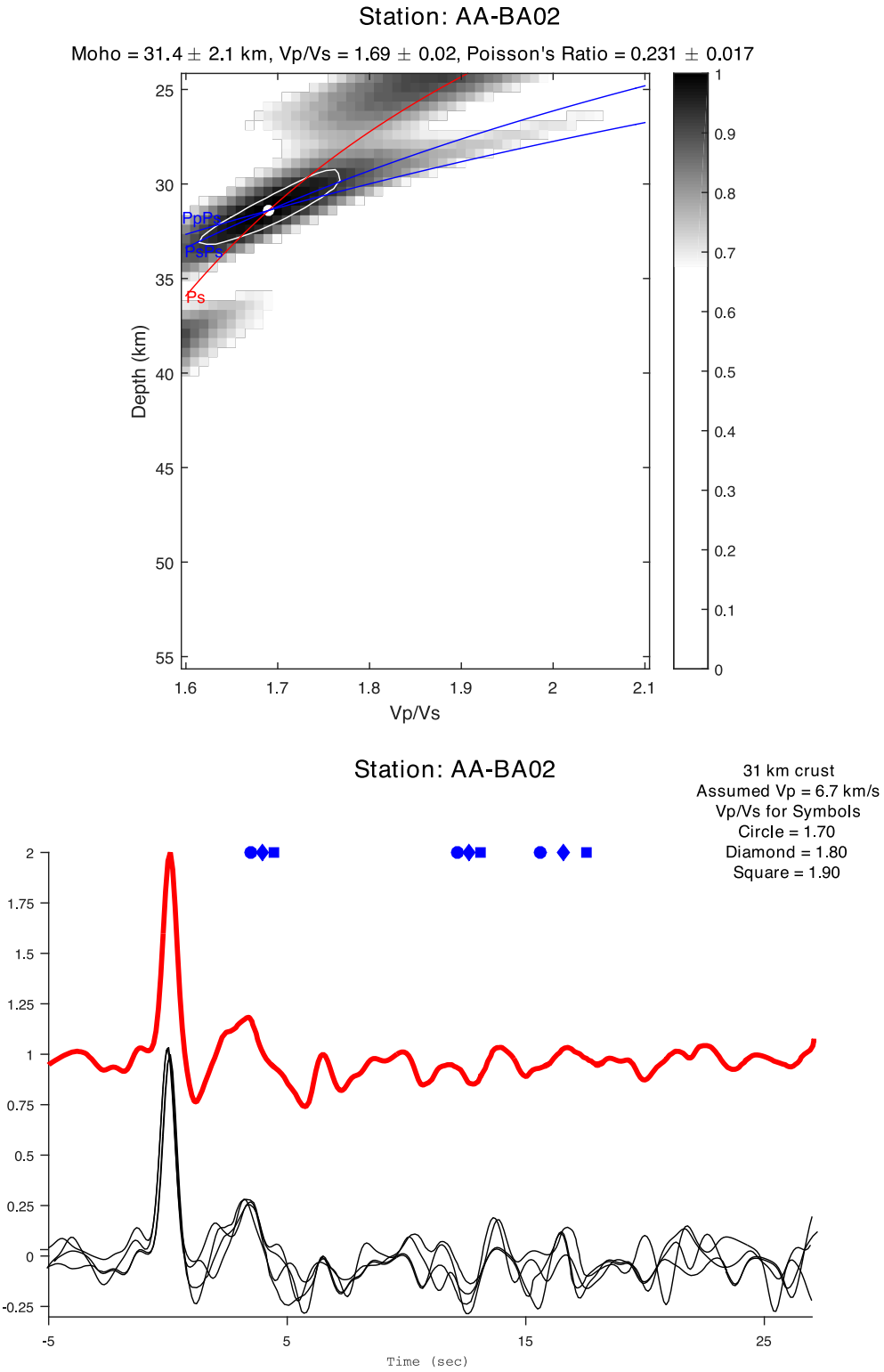
S 6: Result from the H-κ stacking analysis for RFs at station BA11.



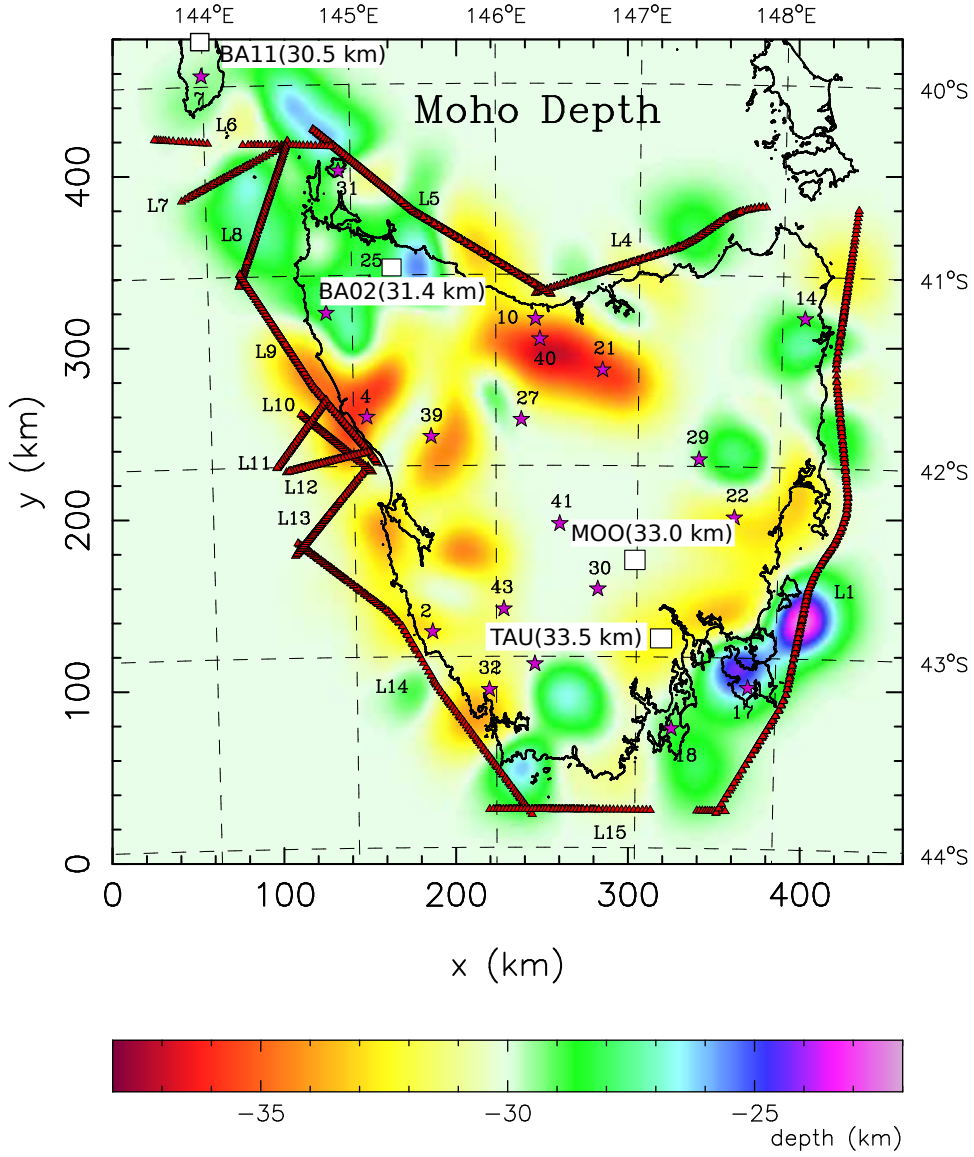
S 7: Result from the H-κ stacking analysis for RFs at station BA13.



S 8: Result from the H-κ stacking analysis for RFs at station BA17.



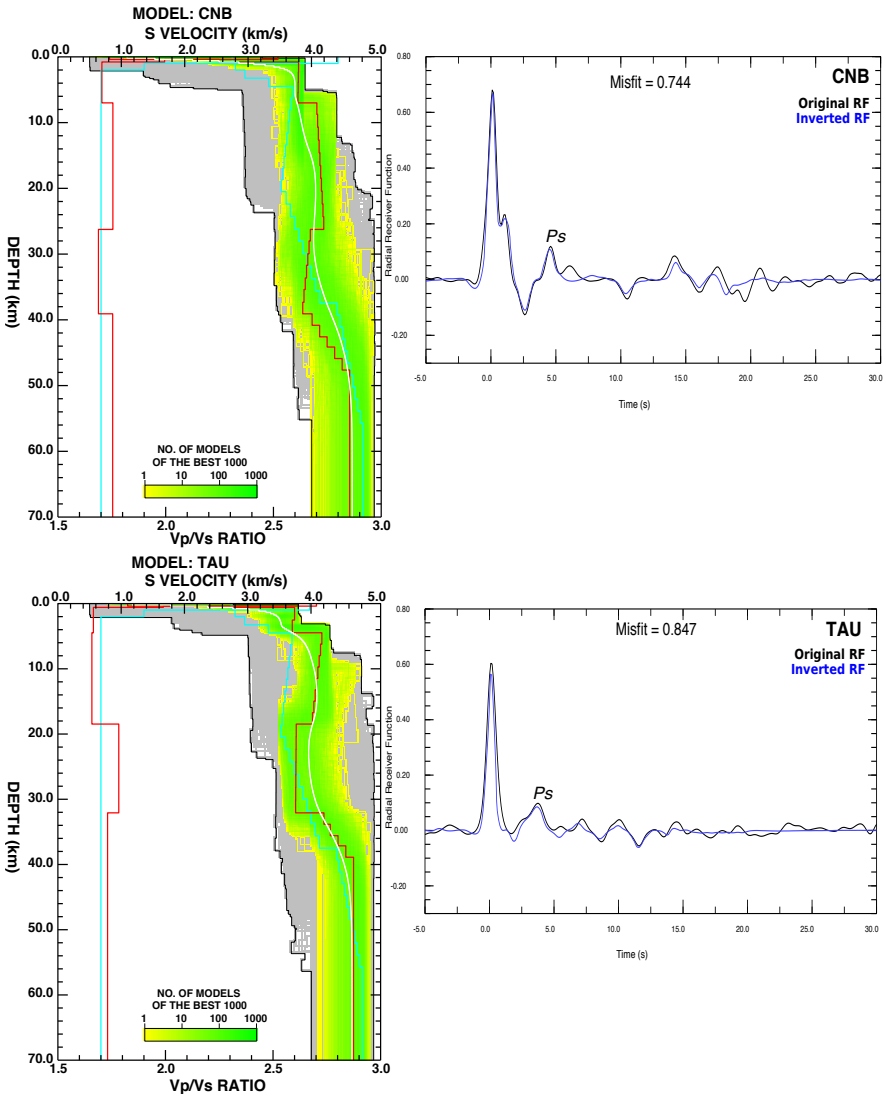
S 9: Result from the H-κ stacking analysis for RFs at station BA02.



S 10: Comparison of the new H-κ stacking crustal thickness estimates (stations represented by white squares and depths highlighted with white background) superimposed on Moho depth estimates of Rawlinson et al. (2001) represented as a colour shaded depth map. Red contiguous triangles represent shot lines (50 m shot spacing) and numbered stars represent land based stations which recorded the shots.

1-D S-wave velocity inversion

This section presents seismic S-wave velocity models for stations CNB and TAU obtained from receiver function inversion using the neighbourhood algorithm. The grey area indicates all the models searched by the algorithm. The best 1000 models are indicated in the yellow to green colour; the best model (smallest misfit) corresponds to the red line, both for S-wave velocity and V_p/V_s ratio, whereas the white line is the average velocity model computed from the best 1000 mdels. (Right) Waveform matches between the observed stacked receiver functions (black) and prediction (grey) based on the average of the best 1000 models.



S 11: (Left) Density plot of S-wave velocity models and (right) observed and synthetic RF plots for stations CNB and TAU.