

Interactive comment on “Finite difference modelling to evaluate seismic P wave and shear wave field data” by T. Burschil et al.

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We thank Y. Yang for the review and the helpful comments that are answered piecewise below.

RC1: *It will be interesting to see the image from depth migration using field data and modified model in figure 11, and how that compare with figure 6.*

AC1: As proposed, we also applied post-stack depth migration, using the two different migration algorithms ‘Implicit Finite Difference Depth Migration’ and ‘Kirchhoff Depth Migration’. The depth-migrated sections differ only slightly in two small regions from the time-migrated and depth-converted sections, so that we cannot identify significant differences between the time-migrated and depth-migrated sections. Comparing

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depth-migrated sections with the time migrations shown in Fig. 6 and Fig. 11, we therefore come to the same result as we already presented. Because of the small differences, we did not show an extra figure. However, we added a sentence in the revised manuscript stating this part of the work and the resulting observation.

RC2: *Page 2180 line 2, “Fig. 8a; Table 4” should be “Fig. 8a; Table 3”. Please make sure the figure number and table number is right.*

AC2: Indeed, this table had a wrong link. We also corrected a couple of other misleading references.

RC3: *It will be better to put the synthetic gather and field data side by side in the figure, so reader can compare them easily.*

AC3: The presented figures were sorted in a logical order, i.e. starting with field records working towards stacked field sections as motivation for subsequent modelling. The suggested side-by-side presentation would definitely improve the comparison of the shot gathers and the stacked section. Therefore, we picked up this idea and added the field data depth section to Figs. 14 and 16 for a better comparison.

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