

Interactive comment on “Measuring and crust-correcting finite-frequency travel time residuals – application to southwestern Scandinavia” by M. L. Kolstrup and V. Maupin

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In this paper, the authors show a method to measure P or S –wave differential times between different stations. To avoid the cycle skip problem for the higher frequency bands, they refer the previously obtained low-frequency travel time residuals. I think this works in usual cases that the dispersions of body waves are much smaller than the residuals. They applied the method on the seismic data recorded by temporal and permanent stations in the region of Fennoscandian Shield. They also make the correction for the crust that depends on the frequency. I suppose that their resultant data were used in the tomography for the upper mantle in the region (Kolstrup et al.,

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Geophys. J. Int., 2015). Although the method was briefly introduced in the GJI paper, the details of the method and the correction are shown in this paper.

I have some questions/comments.

The depth phases such as pP, sP, sS can also cause errors in the travel time measurement because of similar effects by the crustal reverberations. I wonder if observed residuals shown in Fig. 9 and Fig. 10 contain such errors due to the depth phases because they do not show the depths of events.

It is fine that the authors describe about the color of each trace in Fig. 3. I do not know why the colors of the traces for the same station are different between in (a) and (b).

Interactive comment on Solid Earth Discuss., 7, 1909, 2015.

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