

## ***Interactive comment on “Velocity structure and the role of fluids in the West Bohemia Seismic Zone” by C. Alexandrakis et al.***

**E. Korger (Referee)**

korger.edith@gmx.de

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In this paper, the authors investigate the role of fluids in instigating microearthquakes in the West Bohemia Seismic Zone. They present a generally well-documented tomography, done with a prominent swarm of earthquakes. The double-difference method is very appropriate. The results are consciously interpreted and properly set into context. For the most part, the figures are well done. In preparing a revised manuscript, I ask that the authors consider the following comments:

p.513,l.25: What is an "experimentally defined weighting factor"? Did the authors use a previously defined one or did they define a new one for their own dataset? Please define and/or eliminate.

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p.514,l.13: Clarify if the picks were done by the authors or if the picks used in the tomography are the picks from Bouchaala et al. (2013).

p.514,l.8 (Fig. 1): Please include a scale in Fig. 1. I presume that the swarm site is where the profile lines cross - please define in caption. I would also suggest a discussion of the maximum gap for the smaller events - from the figure it looks as if there may be a substantial gap of about 60° for smaller events to the south. I would also appreciate an additional inset showing a close up on the area of the swarm with some events.

p.515,l.14: The double-difference locations are effected by the centroid error. Please give some data concerning errors of the original relocation of events.

p.515,l.26. I would like an additional small figure, showing the 12 velocity models.

p.516,l.7 (Fig.2): Please include information on starting point (e.g. A-A') in Figure and/or caption. It is not clear where the profile starts e.g. Fig. 1

p.516,l.9 (Fig. S1): Please include reference to the subfigures in the caption (e.g. (a) or (b) at the appropriate text).

p.516,l.21 (Fig. S2): Is it possible that the color for the vp/vs perturbation at model (a) is inverted? Please check.

p.519,l.22 (Fig.5): I would particularly like to see a figure not with absolute numbers, but in percentage to input velocity model, particularly with regard to the smearing (c.f. Fig. 3, restoration tests). I am also missing data on ray coverage. The authors say that they show "only areas constrained by data" - how many rays does constrain these regions - and from which direction? Perhaps this information can be added to the supplementary data.

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Interactive comment on Solid Earth Discuss., 6, 511, 2014.

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