COMMENTS TO “RETRIEVAL OF SOURCE PARAMETERS OF AN EVENT OF THE 2000 WEST BOHEMIA EARTHQUAKE SWARM ASSUMING AN ANISOTROPIC CRUST”, *STUD. GEOPHYS. GEOD.*, 51, 231–254

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In the recent publication (Rössler *et al.*, 2007) we reported on small, but significant, non-shear components for one $M_L 3.1$ earthquake in West Bohemia on 15 October 2000, which persisted even if an anisotropic crust was considered. For data analysis we used P waves recorded at temporary and permanent stations of the WEBNET of the Institute of Geophysics AS CR and of other networks. Unfortunately, only after publication of the results, we were informed that the vertical components of three stations, LBC, STC and VAC, were distorted by clipping (*J. Horálek, personal communication*) and thus should not be used for source retrieval. Clipping of P-wave forms was invisible at STC and VAC and difficult to detect at LBC. It could be found from an analysis of S waves, which we, unfortunately, did not study. Neither did we know the clipping level.

We have therefore repeated calculations ignoring the three clipped traces. Despite omitted traces, the newly obtained source parameters did not differ much from the previous ones (see Table 1). The main differences with results published by Rössler *et al.*, (2007) consist in the reduction of data residual by 0.01, in a small rotation of the rupture plane, and in a small decrease of non-shear components. Nevertheless, the non-shear components remain non-negligible, indicating existence of a crack opening during rupture process. Following our previous argumentation, jackknife (see Fig. 1) and bootstrap (not

Table 1. Data residual R , slip inclination δ as well as mean slip inclination $\bar{\delta}$ and standard deviation $\sigma(\delta)$ (the latter two result from bootstrap tests), rupture plane orientation, seismic moment M_T ($M_T = M \times 10^{14}$ Nm), and moment-tensor components retrieved by using velocity Model II. Upper line: results from Rössler *et al.*, (2007), lower line: results with the three clipped traces omitted during inversions.

Model	Slip Inclination [°]				Rupture Plane [°]			Moment Tensor [%]			
	R	δ	$\bar{\delta}$	$\sigma(\delta)$	Strike	Dip	Rake	M	DC	ISO	CLVD
II	0.06	86.8	86.9	1.2	166	76	−40	3.6	82.0	+4.9	+13.1
II (this paper)	0.05	88.2	88.6	1.1	169	76	−39	3.5	91.4	+5.7	+2.8

Fig. 1. Results of Jackknife tests for event and stations considered by Rössler *et al.*, (2007) using the vertically inhomogeneous anisotropic Model II. In 500 realisations, **a)** 10% and **b)** 25% of all available traces are randomly excluded from the inversions. Fault-plane solutions (thin grey curves) as well as *P* (small triangles) and *T* axes (small grey inverted triangles) are plotted for each realisation. Histograms show the distribution of corresponding slip inclinations (δ) and moment-tensor components (DC, ISO). Using all traces, fault-plane solutions and the *P* and *T* axes are plotted in black. The P-wave radiation pattern due to the retrieved source is underlying the fault-plane solutions: grey area - compression, white area - dilatation. Related source quantities given in Table 1 are indicated by arrows in the histograms.

shown here, but with comparable outcome as the jackknife test) tests seem to indicate that the non-shear components are significant.

References

- Rössler D., Krüger F., Pšenčík I. and Rümpler G., 2007. Retrieval of source parameters of an event of the 2000 West Bohemia earthquake swarm assuming an anisotropic crust. *Stud. Geophys. Geod.*, **51**, 231–254, doi:10.1007/s11200-007-0012-9.