**Supplement Captions**

***Fig. S1: Map view of the lineaments of the selected faults: (a) the Vertical fault set; (b) the Andersonian fault set; (c) the Semi-Realistic fault set. The contour of the Germany model (Ahlers et al. 2021a) is indicated by the orange frame.   
© EuroGeographics for the administrative boundaries***

***Fig. S2: Histograms showing the frequency of the four slip tendency types as fractions of 1 for the Vertical fault set. Values greater than 1 are not shown. Bin size is 0.5.***

***Fig. S3: Histograms showing the frequency of the four slip tendency types as fractions of 1 for the Andersonian fault set. Values greater than 1 are not shown. Bin size is 0.5.***

***Fig. S4: Histograms showing the frequency of the four slip tendency types as fractions of 1 for the Semi-Realistic fault set. Values greater than 1 are not shown. Bin size is 0.5.***

***Fig. S5: E-W cross Section through the Upper Rhine Graben boundary faults from the Andersonian fault set (left) and the Semi-Realistic fault set (right). (a) TSeff [-] of the boundary faults; (b) The shear stress τ [MPa] derived from the Germany model. (c) The normal stress σn [MPa] on the faults. Note the different extends of the colors bars of (b) and (c).***

***Fig. S6: Histogram for the depths of the seismic events selected from Grühnthal and Wahlström (2012) shown as blue bars. Only events within the investigation area and with a moment magnitude of 3.5 and greater have been selected. Events without depth information are not shown. The magnitude of the events in the respective bin are shown as orange circles.***

***Table S1: The table lists the faults implemented in the Andersonian Fault set and an ID they correspond to. Faults marked with an x are also present in the Semi-Realistic Fault set. The map shows the Andersonian fault set and the ID of each fault.***