

Supplementary Material

Palaeogeological Hiatus Surface Mapping — A Tool to Visualize Vertical Motion of the Continents*

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Figure Captions:

Figure SM-1. (A) Map showing the central portion of the 1:5 Million International Geological Map of Europe and Adjacent Areas (Asch 2003) in its digital version (Asch, 2005). This map formed the basis for the construction of the base Palaeocene (the darkest orange, Fig. SM2) and the base Cretaceous (light and dark green, this figure) hiatus area maps as shown in Figure SM-3 and in Figure 6 in the text. (B) Same map showing the trace of the basal Cretaceous system boundary and hiatus duration. To construct the hiatus area map for the base Cretaceous datum, trace the basal contact and mark segments that are conformable and unconformable, respectively. Decide how to connect the boundary segments across concealed and eroded regions. Then mark the hiatus duration for unconformable segments and construct a contour plot (C) of equal hiatus duration. The contour lines were connected across regions by assuming that the nature of the contact (conformable or unconformable) did not change across regions where the base datum of interest is concealed or eroded. Additional geological data from basins or the eroded regions will help to refine the shape of the hiatus area maps. In particular, constraints on hiatus age and duration derived from biostratigraphic or radiometric dating are essential in improving the hiatus area maps.

Figure SM-1. continued. (C) Panel of three maps showing the step-wise construction of the hiatus map and contour map from the IGME 5000. Explanation of symbols: black circles with white filling — Anchor points, which uniquely define the conformable–unconformable transitions. Black line (anchor line) — connects the anchor points by interpolation. „?“ — indicates anchor line that is not well defined based on information shown on the IGME 5000. Additional geological data will help to refine the position of the anchor lines.

Figure SM 2. Same as Figure SM1 but for the base Palaeocene datum. Input map is the digital version of the IGME 5000 (Asch 2005).

Figure SM3: Hiatus duration contour map for the base of the Palaeocene datum and graph of hiatus duration versus distance along profile A–A' (see Figure 6, main text). The hiatus contour map for the base Palaeocene was directly constructed from Figure SM2 by countouring areas of equal hiatus duration.