



“Sands of Pangea”-analysing the supercontinent formation and the Mesozoic sedimentary record using LA ICP MS U Pb zircon dating on samples from Germany-

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The Elbe Zone at the northern Bohemian Massif (part of the Central European Variscides, Saxony, Germany) contains important structures and outcrops that help to understand the final pulse of the Variscan Orogeny in Europe leading to the formation of supercontinent Pangea. We will present zircon U-Pb data from that area that allow the timing of the final stage of these movements and of related plutonic, volcano-sedimentary and tectonic processes. In addition, we will show U-Pb detrital zircon ages of sandstones from the Triassic, Jurassic and Cretaceous of Germany to draw conclusions about the sedimentary record and the source areas (provenance analyses) of these “sands of Pangea”.

We have analysed detrital zircon grains from the Buntsandstein (Lower Triassic) and the Keuper (Upper Triassic) regarding their U-Pb ages. These analyses indicate different zircon ages with a main peak at ca. 250 Ma to ca. 700 Ma. Distinct zircon grains of Meso- and Paleoproterozoic ages were found.

In addition to the Triassic samples we analysed detrital zircon grains from the Middle Jurassic (Dogger) and the Cretaceous. The Cretaceous samples show similar ages as the Triassic ones: the main peak of zircon ages lies between ca. 240 Ma and 700 Ma. Also, there are a few isolated zircon grains with Meso- to Paleoproterozoic ages. A real change shows the Jurassic Sandstone, as the zircons of this sample have main ages at ca. 950 Ma to 1900 Ma.

The zircon ages show, that the source areas for the Mesozoic sedimentary record changed clearly. We interpret the Paleozoic to Neoproterozoic ages of all samples as the influx of reworked local material, such as the Avalonian/Armorican basement units and the Variscan Basement. In our interpretation, the enormous amounts of Mesoproterozoic to upper Paleoproterozoic zircon ages in the Jurassic sample originated in the oceanic connection between Middle Europe and Baltica, as these specific zircon ages are typical for Baltica. This oceanic connection was due to the ongoing break-up of Pangea.