



Silurian to Early Carboniferous plate tectonic model of Central Europe

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The presented plate tectonic model focuses on Silurian to Early Carboniferous evolution of Central Europe with special attention given to the Sudetes region (north and north-east part of the Bohemian Massif).

During our studies, we tested alternative models focused on the position of the Armorican terranes, known as the Armorican Terrane Assembly (ATA) (e.g.: Matte, 2001) and tried to refine the existing reconstructions, which describe Armorica as an individual continent during the Late Silurian and Devonian (e.g. Lewandowski, 2003, Winchester, 2002). Our plate tectonic model depicts that these small blocks were scattered along the northern margin of Gondwana, where they formed the "Armorican Spour" as suggested by Kroner and Romer (2013). The seaways were present between blocks. Because of the north dipping subduction zone along the southern margin of the Laurussia continent the back-arc basin and island arc were formed. The narrowing of the Rheic ocean led to the complicated collision of Gondwana and Laurussia. Three main stages of this event can be distinguished: (1) collision of the Armorican Spour with the Laurussian island arc, (2) back-arc basin closure, (3) final Gondwana and Laurussian collision. Those stages correlate well with Variscan Subduction Zone System proposed by Kroner and Romer (2013).

Interactive modeling performed in GPlates, shows that the presented model is valid from kinematic and geometrical point of view.

Kroner U., Romer R., L., 2013, Two plates - many subduction zones: the Variscan orogeny reconsidered. *Gondwana Research*, 24: 298-329.

Lewandowski M., 2003, Assembly of Pangea: Combined paleomagnetic and paleoclimatic approach, *Advances in Geophysics*, 46: 199-236

Matte P., 2001, The Variscan collage and orogeny (480-290 Ma) and the tectonic definition of the Armorica microplate: a review. *Terra Nova*, 13: 122-128.

Winchester J., A., The Pace TMR Network Team, 2002, Palaeozoic amalgamation of Central Europe: new results from recent geological and geophysical investigations, *Tectonophysics*, 360: 5-21