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Dating the isolation of the Central Paratethys: new constraints from magnetostratigraphy (Beocin section, northern Serbia)

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The Paratethys was a large network of inland seas that once extended over Europe from the Alps to the Caspian Sea. Since the Miocene, the Paratethys Sea retreated eastward to the present-day Black Sea, whereby various sub-basins became progressively isolated from the global ocean. The isolation of the Central Paratethys was marked by a change from restricted marine to brackish paleoenvironmental conditions. These changes were associated with a marked sea-level drop. Whether this drop was the result of tectonics in the Carpathians chain and/or regional eustatic variations is still debated. In order to correlate the paleo-environmental changes and to solve the puzzle of the onset of the evolution of this endemic lake, knowing the absolute age of this transition is critical. It is known that the Central Paratethys region was isolated from other parts of the Paratethys at the transition between the Sarmatian (Middle to Late Miocene) and Pannonian (Late Miocene) stages. The absolute age of this transition is still unknown, however. Whether the transition occurred synchronously or diachronously in the different subbasins, is also still unknown. To establish this absolute age, we present here magnetostratigraphic results from the Beočin quarry (northern Serbia) on the Fruška Gora inselberg in the Pannonian plain, where a relatively long section of Sarmatian and Pannonian deposits is present. In total, almost 800 levels distributed over 4 sections in roughly 130 m of stratigraphy were sampled. Biostratigraphic analyses focussed on foraminifera and ostracod data. We will compare our integrated stratigraphic results with recent data from the Styrian basin (Austria) and the Transylvanian basin (Romania). This will help us establish whether the transition occurred synchronously or diachronously across the sub-basins, and to unravel the contributions to the isolation event of global eustatic sea level changes from regional tectonic events.