



Was the lifetime of a tropical lake in Bohemian basins (central Europe) during Stephanian B (Upper Carboniferous) driven by Milankovitch-like orbital forcing?

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Msec Lake, a freshwater reservoir with approximate area of 10 000 km², arose in Bohemian (Czech Republic, central Europe) Permocarboniferous basins in the Stephanian B (~295 My ago). Stratigraphically it is situated in a top part of the Carboniferous continental cyclothems, consisting of coaliferous and/or lacustrine layers indicating perhumid climate and coarser alluvial sediments indicating climate with seasonally more variable humidity. The Lake was formed on a sandy alluvial plain probably by a tectonic movement and existed for a few tens ky, assuming the seasonal nature of organic rich laminae within a mineral matrix. There were several similarly short-living lakes in the Upper Carboniferous and Lower Permian cyclothems in the Bohemian basins, i.e. in the period of assumed global aridization of central Pangaea, with probably orbitally forced recurrences of a more humid climate in the forthcoming drier climate of the Permian. In Trebichovice (close to Slany, Central Bohemia) we retrieved 40 m core covering also about 25 m of laminated silt/clay sequence covering the entire Lake lifetime. The lithological and mineral imprints of changing palaeoenvironment early before, during, and short after the Lake existence and the nature of seasonal laminae in the lacustrine phase are studied to evaluate the hypothesis of the importance of the orbital forcing. Because of a certain diagenetic alteration of the Palaeozoic sediments during Mesozoic burial, the way of reading the Msec Lake palaeoclimatic record must be developed before final evaluation.