Abstract

This thesis deals with the use of geochemical proxies on foraminifera for paleoceanographical, paleoecological and paleoenvironmental interpretations in the fossil epicontinental sea - the Central Paratethys during the Langhian. It discusses the used methodologies and approaches that were specially chosen to fit the problematic of the studied area such as the single test analysis of carbon and oxygen stable isotopes on foraminifera. Other geochemical methods were represented by Mg/Ca based paleothermomethry and by several organic geochemistry proxies on whole rock samples (n-alkane indices, $\delta^{13}C_{org}$, and carbon ratios – TOC/TIC/TC). These were further combined with foraminiferal paleoecological data, which allowed identification of particular water masses in the studied region as well as the prevailing circulation patterns/regimes during the studied interval in the Paratethyan marine realm. Additionally, there were interpreted various regional paleoenvironmental and paleoecological consequences. The Paratethys had similar hydrography of surficial waters with the Mediterranean, conversely to the bottom waters that were different, probably of a regional origin with their own evolution during the studied time interval. The anti-estuarine circulation regime, which was probably linked with the closure of the Indian-Mediterranean gateway that also affected the Mediterranean circulation patterns, was the basic pattern in the Paratethyan marine realm during this time interval. Moreover, the seawater temperature points to a similarity with modern subtropical regions and there is a minor warming trend present despite the expected cooling in the time interval after the Middle Miocene Climate Optimum. Lastly, the Central Paratethys represented a rather open marine environment with dominant marine algal productivity and with changes in paleoecological conditions at the seafloor caused by fluctuations in physicochemical conditions that affected the population dynamics of benthic foraminiferal communities.