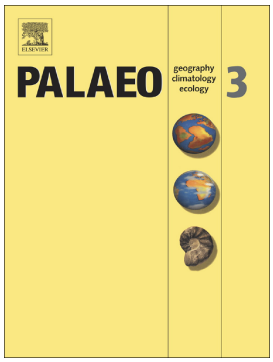

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Magneto-biostratigraphy and paleoenvironments of the Miocene freshwater sediments of the Sarajevo-Zenica Basin

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Abstract

The Sarajevo-Zenica Basin of Bosnia-Herzegovina was part of the Dinaride Lake System, a large network of Miocene long-lived freshwater basins in southeastern Europe. The basin contains a thick sedimentary succession of carbonates, coals and mixed siliciclastic deposits that reflects the paleoclimatic and tectonic evolution of the region. In this study, we present novel integrated (magneto-bio)stratigraphic and sedimentological data and reconstruct the paleoenvironmental evolution of the Sarajevo-Zenica Basin during its two main evolutionary phases (thrusting and extension). The basal "Oligo-Miocene" freshwater paleoenvironments are characterized by alternating palustrine, shallow lacustrine and distal fluvial phases. The base level fluctuations are largely controlled by syn-sedimentary pulses of tectonic loading during the final phase of thrusting in the Internal Dinarides. The majority of this succession is considered early Miocene in age, which contrasts with previous Oligocene age estimates. The subsequent extensional phase initiated not later than ~18.4 Ma. This coarsening upward sequence of lacustrine carbonates, silts, sands and conglomerates is correlated between 17.2 and 15 Ma (C5Cr-C5Br) by means of integrated bio-magnetostratigraphy. During this upper extensional phase, subsidence and sediment influx was