



Climatic, volcanic and tectonic events recorded in recent sediments of the Rukwa rift, Western Tanzania

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Lake Rukwa is now a shallow lake occupying the floor of the closed Rukwa depression in the western branch of the East African Rift System. Sediment records of the paleo-lake level show that during the Late Pleistocene to Early Holocene, Lake Rukwa reached the level of the overflow sill, 180 m higher than its present level, and was overflowing into Lake Tanganyika. Lacustrine sediments from this period are now exposed on the margin of the depression, and in particular along the Songwe River, where several large sections up to 35 meters high can be studied. Investigation of selected sections reveals a complex evolution in alternating fluvio-deltaic to lacustrine environment, punctuated by episodic inflow of volcanic material from the nearby Rungwe Volcanic Province. Macroscopic description of the sedimentary packages and their geometry, combined with C14 dating, diatom analysis, and optical microscopy allow to propose a preliminary evolution scheme in which climatically induced lake level change, volcanic input and tectonic influence can be reconstructed. In particular, correlations between sections at different altitudes allow to better constrain the lake level fluctuation than previous estimates based on drill core analysis.