



High-resolution bathymetry and sedimentology data from Lake Kivu's Main Basin reveals morphology and geochemistry controlled by active subaqueous volcanism since the Holocene

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Volcanic activity has shaped the subaqueous morphologic and structural features in Lake Kivu's Main Basin since the Holocene. Previous studies have speculated on the subaqueous geologic hazards in Lake Kivu that could expel a detrimental quantity of gas locked in its deep waters. A high-resolution bathymetric map covering 224 km² of the Main Basin was acquired using swath bathymetric techniques, and 12 gravity cores were recovered throughout the basin. New geomorphologic features on the lake floor are interpreted as subaqueous volcanoes that are expected to have erupted within the last 1.2 to 5 ka. Subaqueous volcanism is observed in the sediment record in the last 1.5 ka BP, which manifests as increasing concentrations of organic carbon and Pb and the cessation of CaCO₃. The bathymetric and sediment data acquired in this study will be indispensable for a hazard assessment related to a potentially catastrophic eruption.