



## **Multiple collapses at Mt Meru volcano, Tanzania: remote sensing and field evidences from debris avalanche deposits.**

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Mt Meru volcano is located in the Northern Tanzanian Divergence Zone where the East African rift splits into several branches. This 4565 m-high stratovolcano overlooks the highly populated city of Arusha and is breached on the east side by a 4x5 km horse-shoe shaped valley that was attributed to landslides associated with lahars deposits (Wilkinson et al., 1986; Dawson, 2008) and a major collapse (Wilkinson et al., 1986; Roberts, 2002; Dawson, 2008). An ash cone is growing up within the collapse scar, with its last eruption occurring in 1910.

Remote sensing, detailed field mapping and facies/lithology description allowed the recognition of more than two collapse events originated from the main eastern scar, as well as at least one collapse from an almost buried scar on the North East flank. No evidence of syn-collapse eruption has been observed. The high distance and large area covered by the bigger deposit up to the foot of Kilimanjaro is partly due to local interaction with water, where debris avalanche behaves like a lahar. Mt Meru has been undergoing several phases of destabilisation events during its history and can be considered as still potentially hazardous, especially with the ongoing Ash Cone growth within the scar.