



## **Landscape evolution and glaciation of the Rwenzori Mountains: Insights from numerical modelling**

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Numerous high mountain ranges in Africa bear evidence of Quaternary glaciations. We use the Rwenzori Mountains as a test example for modelling landscape evolution in tropical high latitudes, as the extent of the glaciers covering the Rwenzori Mountains was more than 500 km<sup>2</sup> during former peak glacial phases. We employ the newly developed landscape evolution model *ULTIMA THULE*, which simulates the evolution of a landscape by several processes: (i) weathering and slope wash, (ii) fluvial erosion and sedimentation, (iii) glacial abrasion, (iv) surface deformation. The model simulations are driven by the 800,000 year ice-core record from the Dome C Antarctic site, simulating the fluctuations between glacial and interglacial conditions. Climatic boundary conditions are based on present values such as mean temperatures and precipitation, with temporal changes related to the ice-core record. Typical model runs result in sizeable ice coverage during peak glacial phases. The extent of the ice sheets is controlled by climate and the degrading altitude of the mountain range due to the erosional and abrasional processes.