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Recent glacier extent and mass balance survey in the Rwenzori Mountains, Uganda/D.R. Congo

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With heights of 4-5 km, the Rwenzori Mountains include Africa's third highest peak (Mt. Stanley, 5109 m) as well as some of the last African glaciers. The combined area of the Rwenzori glaciers declined



by more than 80% in the last hundred years. Glaciers being sensitive indicators of regional and global climate change, this extreme mass loss reveals a significant shift in climatic trends. The Rwenzori glacier recession evolution correlates well with similarly dramatic glacier retreats on Mt Kilimanjaro (TZ) and Mt Kenya (KE) in the same period, and is attributed to debated causes like increased air temperature or reduced humidity/cloud cover. Due to the severe sparsity of measurement data regarding not only glacier area and volume, but also climatic evolution in the Rwenzoris, the interpretation of the factors driving this recession remains controversial.

The new RIDECE project (Rwenzori Ice dynamics and Environmental Changes) aims at better understanding and documenting this glacier recession dynamics in the Rwenzoris. The current state of the two largest glaciers, Stanley and Speke glaciers, is surveyed using a panel of remote sensing, geophysical and geochemical methods. First results are presented here of multi-year mass balance and remote sensing (Landsat, ASTER, SPOT, Pléiades) studies, with a view to provide a first estimate of modern and recent-past ice budgets in the Rwenzori highlands.

Figure 1: Stanley Glacier, Rwenzori Mountains, Uganda/D.R. Congo

