



Timing and paleoclimate forcings of Late Quaternary glaciations in the Pamir Mountains: ^{10}Be surface exposure dating of glacial landforms

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The Pamir Mountains have been extensively glaciated several times in the past. As glaciers are mainly sensitive to variations in temperature and precipitation, they reflect changes in large-scale atmospheric circulation patterns. The Pamir Mountains are situated in a climatic transition zone between mid-latitude westerlies, the Indian summer monsoon and the Siberian High. Today main moisture to the Pamir comes with SW- cyclones along the westerly jetstream. Up to now the impact of the Indian monsoon on former glaciations of the Pamir Mountains has not yet been adequately examined. Even chronological information about former glaciations in the Pamir are still sparse. The objective of our study is: To upgrade the present glacial chronology by ^{10}Be surface exposure dating of erratic boulders on top of moraines along a moisture gradient from the north-western to the southern Pamir Mountain ranges. We present preliminary ^{10}Be ages from moraine successions of three study sites (Iskenderkul area, Muksu-Kyzlsu area, Alichur area).

Our first results from the southern Pamir (Alichur area) corroborate and refine previously published findings: Extensive glaciation occurred during MIS 4 and during MIS 2 coinciding with low insolation intensity. Because during climatic cold phases the Indian Monsoon was weakened we assume that these glacier advances were mainly triggered by westerly moisture supply. However, our data indicate that glaciers in the southern Pamir also advanced during ~ 58 to ~ 45 ka as also observed in monsoonal influenced Karakoram and eastern Hindu Kush regions. Our surface exposure ages point to rapid deglaciation after ~ 18 ka. So far there is no evidence for glacier advances during the Holocene. Analyses of further samples, from both the Muksu-Kyzlsu area and the Iskenderkul area are in progress.