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## The Karakoram Predicament

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The anomalous behaviour of Karakoram Glaciers (Hewitt, 2005) in the backdrop of a warming planet has been a decade long debate baffling climatologists worldwide. While a lot of effort has been given to understand this behaviour, very little has been explored with respect to the factors that favour glaciation rates. A fundamental approach to glacial mass budget calculation involves a simplistic assessment of accumulation and melt. Analysis of meteorological datasets over the last 40 years yields conflicting scenarios. On one hand, we have observed a significant negative trend in winter rainfall and snowfall amount coupled with increasing surface temperatures and vertical mixing of atmospheric vapour. On the other hand, parameters that reflect the bulk of a cryospheric reservoir such as snow depth, dry snow/wet snow percentages show stable to increasing trend. Between lower moisture input and potential ablation rates, the steady-state nature of Karakoram glaciers have emulated optimism in the works of climatologists worldwide. In this study, we have tried to formulate an 'accumulation index' as a function of moisture input, surface temperature and atmospheric vertical circulation. Precipitation trends are negative yet periodic which suffices a positive accumulation rate. At the same time, local factors such as debris field and wet snow cover area help preserve the accumulated bulk of a given winter through the upcoming warm summers. However, in a potentially warming planet, accumulation rates aren't proportional to ambient temperature. Studies show that the mass balance turns sharply negative at temperatures above  $-10\text{ }^{\circ}\text{C}$  due to accelerated ablation which overcompensates accumulation. This makes the Karakoram phenomenon a function of global meteorology rather than local factors i.e. debris cover, vorticity, etc. Therefore, we suggest that the Karakoram Glaciers aren't behaving anomalously, but lagging in phase with central and eastern Himalayan glaciated regions.