

Interactive comment on “A 70-yr record of oxygen-18 variability in accumulation from the Tanggula Mountains, central Tibetan Plateau” by D. R. Joswiak et al.

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This paper utilizes the upper 17 m section of a 33m ice core recovered from the Tanggula Mtns, central Tibetan Plateau to deduce a significant negative correlation between the annual average ice core $\delta^{18}\text{O}$ and North India monsoon rainfall during the period 1935–2004. In my opinion, the current version is too naïve to be accepted by CP.

The main questions: (1) I can not understand why the authors performed a correlative analysis between the annual average ice core $\delta^{18}\text{O}$ and North India monsoon rainfall, rather than a direct correlative analysis between the annual average ice core $\delta^{18}\text{O}$ and the annual accumulation rates of the same ice core, or the precipitation records

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of the meteorological stations surrounding the drill site. (2) Much work should be paid to the remarkable spatial variation between the Tanggula and Geladaindong ice cores, given the fact that the two drilling sites are closely located. Do they belong to different circulation patterns, or different precipitation resources, or anything else? This kind of spatial variation might weaken the credibility of the Tibetan ice cores as a climatological archive if an acceptable interpretation is not presented. (3) Besides the Geladaindong ice core, there are several other cores (i.e., Dasuopu, Everest, Malan, Puruogangri) available, especially the Himalayan ice cores have been validated as an indicator of Indian monsoon intensity. The authors may consider to explore the connection between the Tanggula ice core and the other cores from the same climatological domain. (4) More contents should be included for the dating. (5) The authors indicated that the TGL05 ice core did not display any signs of annual melt. This may not be true.

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