

Interactive comment on “A comparison of different methods of evaluating glacier response characteristics: application to glacier AX010, Nepal Himalaya” by S. Adhikari et al.

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In this paper several methods to characterize the pace at which a glacier responds to climate change are applied to a small glacier in the Himalaya (AX010). Unfortunately, there is no real attempt to use observational data in a straightforward way and the paper gets stuck in a rather confusing comparison of different theoretical approaches which brings very little new. Much of the text is just a summary of existing material taken from the literature (although a reference to essential work by Leysinger-Vieli and Gudmundsson, 2004, is missing. . .). That one gets different answers if one plugs different numbers in existing equations is rather trivial, and this cannot form the basis of a

C257

research paper. The discussion on reaction time in section 5 is unclear and confusing. The arguments why the vaguely defined (as admitted by the authors) concept of reaction time is useful for the interpretation of glacier records is not convincing. Moreover, the reader gets the feeling that results depend very much on model resolution and set up of the calculations, which is undesirable. The more interesting material, namely how the numerical model simulates the historical length fluctuations of AX010, has been published elsewhere (Adhikari and Huybrechts et al., Ann. Glaciol. 52, 2009). After reading this paper I have concluded that there is little left to justify publication of the current manuscript.

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C258