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Discussions

Interactive comment on "Reconstructing glacier mass balances in the Central Andes of Chile and Argentina using local and regional hydro-climatic data" *by* M. H. Masiokas et al.

Anonymous Referee #1

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The authors applied Marzeion's basic glacier surface mass balance model on glaciar Echauren Norte (which is the glacier with the longest in situ mass balance records in the central Andes of Chile and Argentina) using monthly data (precipitation and temperature) from a nearby station (El Yeso). Using this simple model, they explained 78 % of the variance in the annual glacier mass balance over the 1978-2013 period and showed that precipitation is the most important factor explaining mass balance variations. They also used regionally averaged – monthly hydroclimatic data (discharge, snowpack) obtained following Masioskas et al, 2006 and showed that these data are correlated to glaciar Echauren Norte annual mass balance explaining up to 68 % of the variation since 1909. Then, they compared the long term reconstructed mass bal-

ance pattern of glaciar Echauren Norte with others glaciers mass balance and glacier front chronologies and found similar trends and glaciers advances suggesting Echauren glacier is representative of the region.

The paper is clearly in the scope of "The Cryosphere" presenting an updated regional overview of the glacier mass balance changes in the glaciologicaly poorly known region of the Central Andes.

Interactive comment on The Cryosphere Discuss., 9, 4949, 2015.