

## ***Interactive comment on “Reconciling high altitude precipitation in the upper Indus Basin with glacier mass balances and runoff” by W. W. Immerzeel et al.***

**Dr Andréassian**

vazken.andreassian@irstea.fr

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I agree with the authors that the only possible way to assess unobserved and unobservable precipitation is by inverting the hydrological cycle. I found the study very complete, comparing the major satellite and reanalysis products with catchment water balance.

I personally would have been interested in seeing Figure 8 complemented by a projection of the points in the Turc-Budyko nondimensional graphs (Q/P vs P/E0) : an example can be found in Fig. 2 and 4 in Valéry et al. (2010) It would be a way to show

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how catchments which had a physically unrealistic water balance can be reintegrated into the hydrologically feasible part of the Turc-Budyko plot.

Last, I also take the immodest liberty to suggest a complement for your literature review, but only because it really deals with the same issue of precipitation gradients : Valéry et al. (2009).

#### References

Valéry, A., Andréassian, V. and Perrin, C., 2010. Regionalization of precipitation and air temperature over high-altitude catchments – learning from outliers. *Hydrological Sciences Journal*, 55(6): 928-940.

Valéry, A., Andréassian, V. and Perrin, C., 2009. Inverting the hydrological cycle: when streamflow measurements help assess altitudinal precipitation gradients in mountain areas. *IAHS-AISH Publication 333*: 281-286.

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Interactive comment on *Hydrol. Earth Syst. Sci. Discuss.*, 12, 4755, 2015.

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