Interactive comment on “Modeling Slope Environmental Lapse Rate (SELR) of temperature in the monsoon glacio-hydrological regime of the Himalaya” by Renoj J. Thayyen and Ashok P. Dimri

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In this paper Thayyen and Ashok are evaluating the monthly temperature lapse rate variations in the monsoon regime of the Himalaya.

I suggest to refer a key recent paper investigating the climate, its elevation-dependences, and temporal trends at high elevation in the Himalayan range.


Pag.2 line 15-16 The authors show an increase in temperature and decrease in precipitation for the last twenty years using land meteorological stations.

From Pag.2 line 30 to Pag.3 line 7 Salerno et al., 2015 present the highest altitudinal gradient of the world (77–8848 m. a.s.l.). They found an altitudinal gradient of 0.60 °C (100 m)-1 on the annual scale with a linear trend. Furthermore they calculated the seasonal gradients and found a dry lapse rate of -0.65 °C (100 m)-1 during the pre-monsoon season when weather station registers a mean relative humidity of 62%. A saturated lapse rate during the monsoon season is -0.57 °C (100 m)-1 with a mean relative humidity of 96%. During the post-monsoon period, they found a lapse rate equal to that registered during the monsoon: -0.57 (100 m)-1 even if the relative humidity is decidedly lower in these months (44%). Kattel et al. (2013) explain this anomalous low post-monsoon lapse rate as the effect of strong radiative cooling in winter.