

Interactive comment on “Matching the Turc–Budyko functions with the complementary evaporation relationship: consequences for the drying power of the air and the Priestley–Taylor coefficient” by J.-P. Lhomme and R. Moussa

Anonymous Referee #1

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The manuscript by Lhomme and Moussa addresses the interesting link between the complementary relationship and Budyko curve. I found the paper interesting and well written. I have a few comments: - Actually the first Budyko curve was in terms of net radiation and not potential evaporation. This should be mentioned because there was no drying power in the original framework! - p2 line 29-31: I would remove this sentence on potential evaporation because it is inconsistent with the assumption that it is used for the wet evaporation - p3 line 2 see also Lintener et al. 2015 for an analytical expression of alpha (this should in fact similarities or differences with this expression should be discussed in the context of the retrieved alpha as a function of the shape parameter

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of the Budyko curve - at least qualitatively) - line 8: should mention Szilagyi, J., and J. Jozsa (2009), Complementary relationship of evaporation and the mean annual water-energy balance, *Water resources Research*, 45(9), doi:10.1029/2009WR008129. - line 17 p4: we know this is not correct $b > 1$, please comment or add. - reformulate line 26: rather "as a consequence of land-atmosphere interactions "" as expressed by the CR"

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