

## ***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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