

Interactive comment on “A scaling approach to Budyko’s framework and the complementary relationship of evapotranspiration in humid environments: case study of the Amazon River basin” by A. M. Carmona et al.

Anonymous Referee #1

Received and published: 26 October 2015

The manuscript of Carmora et al presents an interesting perspective on the Budyko curve. I liked the idea of looking at covariations across the three variables and the discussion on the complementary relationship within this framework. The paper is of potential interest to HESS but needs to be made clearer and easier to read. I think a lot of the discussion could be reduced to avoid some circular discussion. Nonetheless I want to reiterate my interest so that the authors do not feel discouraged. Also the authors should discuss the results of Lintner et al. 2015 which discusses the role of the complementary relationship and Budyko curve, published in HESS and on the

C4472

Amazon! line 1 3D is unclear, I think you should maybe give another name because we think in terms of physical x,y, z space. In the abstract and introduction you should refer to Lintner et al who found things along the same lines as what you found and the fact that the complementary relationship and Budyko curve in very humid catchments are modified. line 15 p6 the statement on independence is incorrect: what you mean is that ET and Ep have been assumed independent again it is clear that the authors should refer to Lintner et al line 20 as it is very close to the discussion of the paper and uses the complementary relationship as well, also the problem of the wet end was mentioned in that paper - line 15 p7: study THE water line 23: again you should mention Lintner et al. 2015 Before section 2.2: I have difficulties with the theoretical argument (the limit is correct though) because it is just a curve fitting at the end of the day and of course no places on earth as a 0 aridity index. You should reframe your argument line 20 p9: the data line 10 p10: you didn't mention storage line 10 p11: why is this method the most appropriate (data limitation) equation 9: what is the advantage of the 3D perspective for the curve fitting? line 23 p14: remove fully remove line 24-25: it can be seen..., obvious It is fair to mention that you have two parameters line 6 p17: but Budyko only applies on long time scales, please justify line 10 p19: again mention Lintner et al. 2015 who discusses this point over the Amazon further p25: again the justification on Ep/P goes to zero is a bit sketchy please make it cleaner

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 10515, 2015.