

P9440: did Morton (1983) provide the justification for the complementary relationship over long time scales? I thought the challenge is show why the relationship holds on daily time scale.

P9443: It is not clear how the relationships shown in Figure 1a were obtained and I assume they are from a model? In that case, it would be helpful to provide a brief description of the model.

P9444: If the good correspondence may be coincidental, what these results mean in terms of the prototype?

“A slight decrease in  $E$  is observed for  $W > 0.7$ ”. I am not sure what the authors are referring to here? Please explain.

“We also note that at low soil moisture values, precipitation essentially mimics the  $E$  response..”. I find this statement confusing. I thought under low soil moisture values,  $E$  would mimic precipitation. I can't understand why this would explain a complementary relationship between precipitation and potential evaporation.

P9445: “the prototype's complementary relationship”, is this different from Bouchet's complementary relationship?

P9447: what is  $\eta$ ? What is  $\alpha$ ? I find the description of the Budyko curve is confusing.

The authors frequently refer to the prototype and it would be helpful if this can be avoided.

What is the implied slope of  $E_p$  vs.  $E$ ? Is this the line shown in Figure 1b? What is the significance of the slope?

P9449: “In contrast to the complementary relationship, the Budyko curve is extremely robust, with no apparent change in the shape for these variations”. The Budyko curve (Budyko, 1974) has no parameter and it is simply a function of the dryness index, but other similar equations can vary depending on the model parameter. The authors seem to suggest that the complementary relationship is not robust. Any evidences to support this claim?

P9450: “Rather than present the complementary relationship..., we instead show the surface temperature and specific humidity profile as functions of soil moisture”. Does this mean the surface temperature vs soil moisture relationship can be used to represent the complementary relationship? I find it difficult to follow the discussion. What is the fixed  $E_p$  case?

“This in turn feeds back onto precipitation... with increase water vapour and connective cloudiness”. Is this result of the model (i.e. the prototype)? Or this is just a general statement?

P9542: Why would  $E$  increase under warming at low soil moisture and decrease for soil moisture above 0.5? What are the mechanisms for such changes in  $E$ ?

P9454: The authors stated that they derived analytic expressions for the Budyko and complementary relationships based on an idealised prototype. Do the authors mean that they have derived Equation (11) and Equation (15)?