

Interactive comment on “Long-term relative decline in evapotranspiration with increasing runoff on fractional land surfaces” by Ren Wang et al.

Anonymous Referee #2

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The present study investigated the ratio of latent heat flux to available surface energy (EF) using an ANN method and FLUXNET and meteorological station data, and reported that EF decreased on a fractional land surface, especially, it was accompanied by increased runoff (precip – et). The topic of the study falls into the scope of the HESS journal, and the conclusion is interesting. A minor revision is recommended before its publication.

Major concerns: a) The validation of the ANN method needs further clarifications. From lines 161- 162, r ranged from 0.782 to 0.768, corresponding to a R^2 of 0.59-0.61. More clarifications are needed to prove that such accuracy is acceptable. Probably, the

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authors could compare the accuracy obtained in the study with those in previous similar studies. b) The writing of introduction and conclusion sections need to be improved. The introduction section: this section mainly stated that the traditional method did not consider the dynamic change of leaf stomatal resistance/conductance, while info about the similar studied based on observed data is a little bit limited. The conclusion section: this section is too simple, only the sentence starting with ‘however’ is a conclusion. Please add more info to this section.

Minor concerns: Line 18: ‘namely that. . .’ should be changed to ‘namely, . . .’ Lines 35-38: the description about the ET output from models is incorrect, cause most simulated ET output actually has already considered insufficient soil moisture’s influences. Line 64: ‘EF’ seems to appear for the first time here, so full name is needed for EF. Line 72: radiation is missing after ‘shortwave’? Line 82: Station meteorological data might be a better caption. Line 135: ‘rs’ appears for the first time here? If so, the full name is needed. Line 242: References of Fu et al. (2012WRR, 2015JGR-A) are recommended here to illustrate ENSO’s influences.

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