

Hydrol. Earth Syst. Sci. Discuss., referee comment RC1
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Comment on hess-2021-340

Anonymous Referee #1

Referee comment on "Evaporation front and its motion" by Jiří Mls, Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-340-RC1>, 2021

The article is devoted to the definition of the evaporation front by means of porous media characteristics and the formulation the law of its motion in more or less general case of a water transport. In my opinion this topic is relevant and important for research. The evaporation front is considered as a sharp surface. First, the author generally defines the evaporation front with the help of intersection of dry and wet zones of the water-vapor-gas flow in question and their outer boundaries. Then, using the law of conservation of mass, the law of motion of the evaporation front is presented in a fairly general case. The unknown fluxes are determined from the basic equations, which express the fundamental laws in the field of a porous medium. The rest of the paper is devoted to the formulation of one dimensional problem and consideration of some special cases. However, the paper itself is written somewhat carelessly. I was not able to understand the derivation of the formula (5), which gives the main result of the paper. What do the designations n and θ mean? What is in parenthesis? Scalar product with normal? In any case, the author should carefully clarify equation (3) and define the notations involved. In this context, I am finding the possibility of accepting the paper for publication as at least marginal. The paper needs the major revision, and then a new review for the possibility of publication.

Please also note the supplement to this comment:

<https://hess.copernicus.org/preprints/hess-2021-340/hess-2021-340-RC1-supplement.pdf>