Dear Dr. Stocker,

Thank you very much for the positive feedback and for the opportunity to submit a revised version of our manuscript. We appreciate your thoughtful suggestions and the adjustment of the subject area to better reflect the eco-hydrological focus of the study.

We have addressed all the formatting and technical points as follows: Associate editor's comments are shown in *blue italics*, followed by our **response**.

Comment 1: Figures appear pixellated. Please make sure to produce all figures as vector graphics (no png, or jpeg).

Response: We have replaced all the figures with high-resolution vector graphics in .pdf format to ensure maximum clarity.

Comment 2: Fig. 2: please add units in y-axis labels and caption, or specify that it's unitless.

Response: The error metrics (RMSE and MAE) refer to volumetric water content (%). We have updated the y-axis and the figure caption to explicitly include the unit (%).

Comment 3: Fig. 3: please specify units of colour key (appearing on the right)

Response: We have added a label to the color key axis to specify that it represents **Relative change (%)**.

Comment 4: Fig. 4: please make this full text width. The points have substantial overlap as plotted.

Response: Figure 4 has been adjusted to full text width. This increased horizontal scale and reduced the overlap of datapoints.

Comment 5: Eq. 6: please specify index over which the sum is taken.

Response: Thank you for pointing this out. The summation is taken over the index j. We have updated Equation 6 as follows:

$$H_i = C_{RT} \sum_j (\Psi_j - \Psi_i) max\,(c_i, c_j) \frac{R_i R_j}{1-R_x} D_{tran} \qquad (6)$$

Comment 6: Eq. 8: R has index i, but that index does not appear on the right side of the equation. Should there be an index i in d?

Response: We appreciate the correction. We have updated the equation to:

$$R_{d,i} = \frac{R_0}{1+\left(\frac{d_i}{d_{50}}\right)^a} \qquad (8)$$

where, $R_{d,i}$ is cumulative fraction of roots above soil depth d_i (cm) for the i^{th} layer, and d_{50} is the soil depth (cm) at the median of the root distribution and a is the shape parameter.