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Thank you for your evaluation!

We have implemented the changes. We have also made some revisions so that the proof stage is easier:

1. We revised Figure 1 to remove some arrows that went out of the NN. It now illustrates the approach concept more correctly.
2. As promised, we have made the code repository publicly available and has announced it in the Code Availability section.
3. The numbers are figures were updated slightly, but no statements or conclusions need to be changed. This mainly resulted from our rigorous self-check, in which we updated a formula for more scientific rigor. As you can see from a track change, the changes to the figures are hardly discernible. The update to the numbers in the text are also minor.

Please consider the following technical corrections:

line 190: add a 'the' before 'adjoined'

Done

lines 459-461: remove the repetitive sentence and add 'see methods section, ' before 'Table 2b'.

Done

line 490: replace 'have' by 'has' (the subject 'group' is singular)

Done

line 638: replace 'can' by 'does'

Modified to “Not only is differentiable modeling able to improve simulation quality and provide model parameterization, **it also allows us** to modify model structure and ask questions regarding unclear parts of the model in the future.”

line 679: check the unit " $s^{-1/2}$ "

Equation removed and the sentences was updated as the following since we no longer use this equation:

“... g_b is the leaf boundary layer conductance, which was available in Lin15 for some sites and the missing values were filled using the mean g_b of the whole dataset”