

Interactive comment on “Atmospheric drivers of storage water use in Scots pine” by H. Verbeeck et al.

Anonymous Referee #3

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General comments

The paper focus on the use of a mechanistic model to evaluate the climate effects (mainly radiation and VPD) under no limiting soil water conditions on the use of storage water. As first comment one should notice that in general use of storage water is mainly relevant under conditions of soil water stress, as the Authors have recognized. Indeed their interest in the future is to develop further work in this direction. Thus to me it would have been more complete to publish a paper on the overall study of climate/ soil moisture effects. This include also the other paper on model validation (very critical for the current paper results) which is briefly acknowledged (see also below) but not fully addressed. I would say that despite the tendency today to publish many papers (for academic reasons) and give a fragmented vision of the research, we should come back

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to more comprehensive studies. However this is only an opinion and thus not prejudge any criticism with the current paper.

Specific comments

One of the main result of the paper is the different response of radiation from VPD. However these two variables are sometimes highly correlated. I do not like plotting simply them independently. I think the Authors should separate and work on residuals to clearly prove the conclusion. They try to do it with 2 days of similar radiation but different VPD, I think it is not enough, they should provide a graph with residual analysis as in fig.6 for all the days.

The results are model dependent since water storage is not measured. The model is validated in another paper, which is not available yet and should be ok. However it seems that validation is made by sap flow measurements only (I may be incorrect), however I think it is critical to measure and validate model also with the stem water content, since this is the basic variable on which the analysis is performed. Any model cross-check with water content measurements ?

I do not have technical comments besides figure 9 which has to be improved.

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