

Response to Anonymous Referee #1. The original comment is given in blue font, followed by our response.

Scientific questions / specific comments: While the conclusions regarding the effects of the RH_crit are well founded, the authors further conclude that extended spin up times to allow for slowly evolving components of a model are not necessary to provide accurate results. I feel that this conclusion may hold for the Shropshire area, but the authors show not enough evidence that this is true for other areas where surface and soil types may show a much larger spatial and temporal variability. I do not think the authors intend to generalize this conclusion, and an additional sentence could avoid any misinterpretation of this conclusion.

We agree with this and have clarified this in the manuscript.

Page 4458 Line 11: maybe replace "part" with "10 by 10 km"

This change has been made to the manuscript.

Page 4466 Line 7: add "downward" before "longwave"

This change has been made to the manuscript.

Figures and annotations: I think the authors could improve the figures by adding consistent axis annotations, for example "Temperature (°C)" instead of using a mixture of "deg C" (fig 3) "K" (Fig. 5) , "degC" (Fig. 6). Figure 9, for example, has well labeled axis, listing the variable name and the units.

All of the figures have been reviewed with this in mind and the axis annotations edited to address this concern.

A consistent labeling of the times as either proper date or "day of model run" may further improve the figures.

All relevant figures have been edited to make this change.

Figure 4: Please check soil moisture content units. Shouldn't this be [kg / m3]? Do the values vary widely because the layer thickness varies?

The units on this figure were correct and the values do correspond to kg/m², however the analysis for this figure has been redone using kg/m³. The values did indeed vary widely because of different soil level thicknesses and using units of kg/m³ it was possible to combine soil moisture from all soil levels onto a single figure.

Please check for reference to "100m_rhcrit" in figure annotations. In the text the run is referred to a "d100m_r"

This change has been applied.