

We would like to thank Dr. Szilagyi for reading and commenting on our manuscript. Our response to the comments can be found below (the review comments in blue, our response in black).

Best regards,

On behalf of all authors, Anne Hoek van Dijke

---

The manuscript presents results for one particular vegetation type: a forest-stand in a moderate climate yet the authors try to draw broad conclusions about their results.

We thank the reviewer for his remark. Indeed we present results for a particular situation and it is not our intention to draw broad conclusions. We believe that we do not generalise in the main conclusions (line 23-27 and paragraph 5c), but after reading your review we realise that we can be more specific in some other parts of the manuscript. Below we suggest textual changes to constrain the manuscript more to the studied conditions.

The applied fine temporal (daily) and spatial (hundred meters at most) scale is also very important to keep in mind, although they emphasize these correctly but not consistently.

We fully agree with the reviewer that the applied scale (both temporally and spatially) is very important to keep in mind. In our study we focus on small scale variability in transpiration. We had the opportunity to work with a unique dataset that allows us to study this small scale variability. As far as we know, no comparable datasets are available and therefore, we focus on this particular situation and do not intend to draw broad conclusions.

In the introduction (from line 70 onwards), we mention that, while other studies were carried out on the scale of 100 to 1000 meter, we aim to study small scale variability in transpiration. To be more precise, we will add to line 82 “by using 30 m resolution NDVI data”. In the methods section we further elaborate on the resolution of the used data sets. In the abstract and conclusion the ‘small scale variability’ is mentioned briefly (line 25 and line 408). Following your comment, we will emphasize the studied scale a bit more throughout other parts of the document. We will change the sentence “Second, the spatial variability in NDVI was low ...” (line 322) into “Second, because we study small scale variability in a small study area, the spatial variability in NDVI was low ...”. In the discussion (from line 350 onwards), where we compare our study with other studies, we will add a note that these other studies were carried out on a larger scale. To the conclusions (after “satellite derived NDVI”, line 391) we will add “We focussed on small-scale variability, both in space and time.”.

For example, they mention previous NDVI-ET studies in the introduction but they do not mention whether the particular study fits the scope of this MS. When they mention e.g., the 2000 study of Szilagyi, they do not point out that the NDVI-ET relationship was established for an entire watershed and on a warm-season (i.e., several months long) temporal resolution, which is quite different from their forest-stand and daily case.

In the introduction (from line 45 - 47) we cite two NDVI-ET studies (of which one is the study of Szilagyi, 2000) and mention in which vegetation type they were carried out. To be more complete, we will add the spatial and temporal resolution on which these studies were carried out. From line 50 onwards, we mention various NDVI-ET studies carried out in different climate zones and vegetation types and on different scales. We do not intend compare our study with these studies, rather we want to provide an overview of previous work and the applications of the NDVI-ET relationship to identify the research gap that we focus on in our analysis. We will make that more clear in the revised manuscript. In the discussion (from line 350 onwards) we cite a few studies that were all carried out in forested regions. These forests are (partly) different with respect to climate and phenology. Following your comment we will mention this more explicit. To the first sentence of the conclusions (line 391) we will add “in a temperate forest catchment”.

The authors should be very careful not to generalize their findings to situations they never investigated. How does a forest (with permanent vegetation) translate to crops with varying vegetation (from sowing to full cover to bringing the crops in)? Either they should expand their research to other vegetation types or constrain their conclusions to what they investigated without undue and unsubstantiated generalizations.

We had the opportunity to study small scale variability in transpiration in a temperate forest ecosystem in Luxembourg and it is not our intention to generalise these results. With the suggested textual changes we will make this more clear in the revised manuscript.