Dear Referee,

Thank you for your time to review our manuscript and for all your constructive suggestions considering our study. It helped to improve the quality of the manuscript. We reply to your comments below. Our response to the comments appears in bold and revised text as *italic*.

Main comments:

- General figure comment: The way the figures are organized makes them take up a lot of space on screen/paper resulting in a lot of unnecessary white space. The white space makes the figures break up the text significantly more than normal. I'm not sure if the journal editors will organize the figures better but I recommend some reorienting of the plot frames to minimize white space.
  We understand the reviewer. Indeed during the publication phase, also copy-editing will take place, so that figures will nicely fit onto pages in combination with the text. Also single-column figures 1, 3, 6 and 8 will be fit into a single column.

- The way the results are presented and discussed – i.e., a multitude of acronyms and organization on plots – makes interpreting the results and following the discussion a bit cumbersome. At the very least, sub-section headings would be helpful that remind the reader what the plethora of non-standard acronyms mean. I leave it up to the authors to decide how best to achieve this clarity, but due to the myriad of techniques being compared, some more nuanced form of organization is necessary.
  We agree with the reviewer that the organization might be difficult to understand without any headers. Therefore, also based on the other reviewers' comments, we have added headers in the results and discussion section. In the results section, we added the following subsections: *4.1.1 Energy-balance method versus two-wavelength method, 4.1.2 C_{nn} Correction methods, 4.1.3 Free Convection scaling, 4.1.4 Comparison with alternative L_vE methods*
  In the discussion section, we added the following subsections: *5.1 Energy-balance method versus two-wavelength method, 5.2 MOST L_vE estimates versus free-convection* and *5.3 Potential of CMLs to estimate L_vE*

- The authors seem to focus their scintillometry references to EU-based sources (Specifically in the paragraph starting on Line 337). There are many studies performed in the U.S. and China post Ward et al. 2015 that help to paint a more thorough picture of how well scintillometry works over generally heterogenous terrain. I won't provide specific examples, but I strongly encourage the authors to include references outside of their realm of influence – we are no longer in the preinternet era where it was nearly impossible to know if someone on the opposite side of the world is performing similar research. Science should not be limited by political borders, and more global citations will lead to better dissemination of knowledge and more efficient scientific progress.
  We agree with the reviewer that in some cases our sources are EU-based. Therefore, we add some recent studies scintillometry has been applied in heterogeneous or complex terrain. Moreover, many other studies on heterogeneity or over cities have mostly focussed on obtaining a sensible heat flux by using a LAS, whereas here we originally aimed to illustrate the potential of microwave scintillometry for latent heat fluxes. We do realise that it would be valid to also mention these studies here. We added as follows:

Generally, microwave scintillometry has proven itself as reliable method to estimate LvE over different landscapes, such as heterogeneous farmlands (e.g., Meijninger et al., 2002, 2006; Beyrich et al., 2005; Xu et al., 2023), cities (Ward et al., 2015a). Also, in areas with a more complex topography, scintillometry has shown its value for estimating the turbulent heat fluxes, especially on larger-scales, such as over vineyards (Perelet et al., 2022) or hilly forests (Isabelle et al., 2019). For H, several studies, some only using an optical scintillometer, have shown the potential over heterogeneous farmland (e.g., Beyrich et al., 2002; Ezzahar et al., 2007), arid regions with sparse vegetation (e.g., Asanuma and Iemoto, 2007; Kleissl et al., 2009), and cities (e.g., Lagouarde et al., 2006; Lee et al., 2015). Yee et al. (2015) compares several scintillometers…

Specific comments:

- Line 57: "…i.e. the spectral noise correction method" – a reference here would be useful or at the very least a description on what the correction entails. Right now the study has very minimal data QC notes
  It is unclear what reviewer is referring to, because the preceding text explains the nature of the corrections. Moreover, this paragraph starts with stating the reference. Therefore, we leave it as is.

- Line 189: "the Nokia CML vibrates during higher wind speeds" – Do you have any information on the beamwidth of the Nokia link? You mention vibration and link to the other paper in review but their handling of the vibrations is the same single sentence. I have no problem with the cutoff above 8 m s-1 . I am more interested in whether these commercial icrowave links are less sensitive to vibrations than the RPG system.
  The half-power beamwidth of the Nokia is 1.6 degrees. However, this does not mean that the signal intensity is constant within this main lobe.
  The Nokia CML is more sensitive vibrations than the MWS, mostly due to relatively basic mounting system of the Nokia. Therefore, we added as follows:
  … higher wind speeds (van der Valk et al., 2025). This is caused by the relatively weak mounting system of the Nokia, as no vibrations are found in MWS even though both are mounted in the same mast…

- Line 190: "Additionally, we remove rainy intervals or those following a rain event within an hour…" – How do you determine the 1-hour cutoff? Radomes do get wet and require a drying off time. In my experience, this is strongly dependent on precipitation amount and can take upwards of 6 hours to dry following strong precipitation. Perhaps a better metric would be when the average signal has returned to XX% of the pre-rainfall signal strength.
  We fully agree with the reviewer that a more sophisticated method would be to base this on the average signal strength in comparison to the pre-rainfall signal strength. Typically, it takes around 5-10 minutes for the Nokia antenna to dry and return to pre-rainfall signal strength, as is shown in Fig. 13 in van Leth et al. (2018), where they use the same Nokia link. Setting the cutoff to 30 minutes might have sufficed as well; however, we selected here the 1-hour cutoff to be certain that the antenna covers would be definitely dry.

- Section 3.3 – Acronyms should not be used in section headings unless they are known ubiquitously, like TKE and MOST.
  We changed into:

Remotely-sensed net radiation estimates

- Figure 6 – Description of the frames should be in the caption. It is not unheard of for readers to skim through figures first and with the large number of accronyms used in this manuscript the definitions of the acronyms used in this, and other, figures gets lost without a reminder for the reader in the caption. This comment applies to all figures.

  We understand the comment of the reviewer. In combination with this comment and comments of other reviewers, we have decided to include an abbreviation list in the appendix. To refer the reader to this, we add in the theory section, experiment section and in the captions:

  We refer the reader to Appendix A for a complete overview of the used abbreviations.

  Additionally, we extended the caption in each figure, so that the abbreviations are easier to interpret. The caption for Fig. 6 becomes for example:

  ***Figure 6**. Statistical metrics per method and scaling to obtain L_vE estimates using the Nokia CML for both correction methods (shape) versus both reference instruments (color). The solid line indicates the statistical metrics of the reference instruments versus each other (Fig. 3). CML-2λ method uses the two-wavelength scintillation method with the CML and LAS, CML-EBM-OBS uses the measured energy balance method as constraint to infer the turbulent heat fluxes and CML-EBM-LSA uses the estimated net radiation by LSA SAF instead of the measured net radiation. The "FC"-suffix refers to the free-convection scaling. The dotted line shows the statistical metrics of a comparison between the L_vE estimates directly obtained from LSA SAF versus the MWS-2λ method. The dashed line represents L_vE estimates based on the measured available energy (R_{net} −G) and the Bowen ratio β obtained from the EC-system, i.e., (R_{net} −G)/(1+β) versus the MWS-2λ method. The used Bowen ratio is a median value for the full data period (excluding nighttime intervals), as a means to obtain an objectively selected, representative Bowen ratio value to estimate L_vE from only net radiation measurements. We refer the reader to Appendix A for a complete overview of the used abbreviations.*