We want to thank the editor for his time and efforts! The raised comments were worth noticing, and we edited the MS accordingly. The most significant changes considered the latter part of the MS to which we added discussion on the limitations of the selected methodology. Please find our point by point answers below.

P1L10-11: The sentence was removed.

P2L29-30: Clarification was added to the sentence that the 0.4% means the average increase in soil carbon content on all soils. Furthermore, we added a sentence to highlight that the increase of soil carbon is related to soil properties, e.g. clay content.

P2L44-45: Evapotranspiration corrected to transpiration.

P2L54: “better” changed to “improved”.

P2L57: “global monitoring and verification system” changed to “global measuring, reporting and verification systems”.

P3L62-63: We removed the reference to carbon sequestration from the abstract.

P3L64: “Nordic countries” changed to “Northern European countries”.

P3L88: “Repair seeding” corrected to “oversowing”.

P4L93: The cutting height was increased by the farmers because they want to apply practices that are presumed to increase carbon sequestration.

P4L95: “was” changed to “is”.

P4L101: “was” changed to “were”.

P4L102: “was” changed to “were”.

P6L151: Data coverage was calculated for all 30-minute periods within the two study years, i.e. 35 088 time points (including the leap day 29.2.2020). We added this information to the revised MS.

P7L172: “net exchange” corrected to “net ecosystem exchange”.

P8L195: It is mentioned after the balance equation that other carbon losses, such as leaching, are not taken into account in the balance. We included discussion on the possible importance of these components in the revised MS (see later).

P9L208: Yes, this part of the sentence was removed.

P9L225: We added a note that the signal is dominated by transpiration.

P9L226: “content” changed to “storage”.

P10L242: In this case, the mean air temperature was calculated for the main growing season, i.e. May to September. It was clarified by changing “these months” to “these periods” referring to the previous sentence.

P10L246-249: The wintertime fluxes were very small, even compared to the summertime nocturnal fluxes. In March 2019, the field seemed to uptake CO_2 during a few days when the snow cover was thin and light availability was sufficient. Other than that, no notable CO_2 uptake was observed outside the thermal growing season. As the CO_2 fluxes during those days played an insignificant role in the whole carbon balance and the snow depth measurements were taken outside the footprint area, we prefer not to discuss this phenomenon in the manuscript.

P10L256: Subtitle changed to “CO_2 and H_2O fluxes”.

P15L316-317: We clarified the relationship between the carbon balance and SOC.

P16 Figure 7 caption: Obviously, a greater sample size would be desirable, but taking and analysing 1-m core samples is a resource-intensive task. However, these five samples were taken so as to obtain representative data within the main footprint area of the eddy covariance measurements. We added a few sentences to the discussion to address the uncertainties and limitations related to the fairly small sample size.

P16-17L337-339: Based on the comment, we removed the comparison of our carbon balance to the CO_2-eq. balances of European agricultural grassland sites

P17L356: “activities” added.

P17L356: “was” changed to “were”.

P19L416-423: The paragraph was reformulated, and limitations of the current research, such as a missing leaching estimate and the small number of soil samples, were mentioned.

P20L442-447: This part of the text was rephrased, and the discussion of limitations was enhanced. Furthermore, the need for further research was highlighted.

P20L451: Yes, we agree. The sentence was rewritten, and the conclusion was modified indicating that the field has a potential to mitigate climate change but further studies are needed to more accurately quantify the long-term carbon balance and to address the contribution of other carbon fluxes, such as leaching and other carbon containing gases.