

We thank Yanhui Wang for reviewing our manuscript and for providing helpful comments. Below we respond (in bold type) to the reviewer's comments (in normal type).

This study explored the seasonal dynamics and spatial patterns of soil moisture by intensive measurements of soil water content from 5 m profile in a loess catchment in 2016-2021. The results have practical implications for catchment-scale hydrologic modeling and the design of soil moisture monitoring networks. The paper is well written, but there are a few minor issues that need improvement before acceptance.

Thank you very much for the positive evaluation.

Line 18: Isn't it 5.5 years from April 2016 to October 2021?

We will correct 6.5 years to 5.5 years: *"In this study, volumetric soil moisture was monitored monthly for 5.5 years at 20 cm intervals between the surface and 500 cm depth at 89 sites across a small (0.43 km²) catchment on the Chinese Loess Plateau."*

Line 95-96: Please explain what local and nonlocal controls specifically denote.

We have provided a comprehensive overview of the "local" and "non-local" controls in the first paragraph of the Introduction section, please see Lines 53-60: *"Grayson et al. (1997) and Western et al. (2003) demonstrated that topography has a greater influence on spatial patterns of soil moisture under wet conditions, due to redistribution of soil moisture by lateral flow, resulting in wetter soils along hillslope drainage lines in convergent topography. Under dry conditions, by contrast, soil properties and vegetation become more important factors because soil moisture is mainly affected by point-scale vertical water fluxes. Any topographic influence under dry conditions is more likely to be due to aspect rather than topographic convergence (Grayson and Western, 2001). Grayson and Western (2001) summarized this phenomenon as local and nonlocal control on soil moisture under dry and wet conditions, respectively."*

Line 260: The title from x axis is missing in Fig. 2., and the x axis scale capital letter meaning should also be stated. Check the other figures in the paper in the same way.

We will add the note concerning the capital letters in the x-axis of Fig. 2: *"The capital letters in the x-axis indicate the months from January to December. The same abbreviations were used in the other figures."* We believe the x-axis title can be omitted with the help of the new added notes.

Line 262-264: The explanation of the data results should appear in the results and discussion rather than in the figure title. Other figure titles in the paper also have this problem, please modify it.

We believe that providing interpretations within the figure captions can improve the overall readability of the manuscript. Readers can directly grasp the main message conveyed by the figures without having to flip back and forth to the main text. Furthermore, many readers scan the figures of a paper without reading the entire text; putting the main points in the figure captions allows these readers to immediately grasp most of the main points of the paper. For these reasons, some academic journals require figures to have informative captions to enhance the overall quality of the manuscript. We will retain the explanatory content in figure captions, as part of a deliberate strategy that allows many readers to immediately understand what the figures mean, and to grasp many of the main points of the paper even if they do not read the text.

Line 402-404: “Some previous studies (e.g., Western et al. (2003) have reported that soil moisture patterns are predominantly shaped by topographic convergence, and that these effects are stronger during the wet season”. The grammar of this sentence is wrong, please correct it.

We will correct the grammar: “*Some previous studies (e.g., Western et al. (2003) have reported that soil moisture patterns are predominantly shaped by topographic convergence, and that this effect is stronger during the wet season.*”