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Interactive comment on "Consumption of atmospheric methane by the Qinghai–Tibetan Plateau alpine steppe ecosystem" *by* Hanbo Yun et al.

Anonymous Referee #2

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This paper entitled "Consumption of atmospheric methane by the Qinghai-Tibetan Plateau alpine steppe ecosystem" describes a study of methane dynamics determined with a rich, multi-year microbial and eddie-covariance data set. The authors observed an interesting shift in the ecosystem from a CH4 source to a sink over the season and propose a new seasonal separation based on soil and microbial conditions rather than air temperature. The modeling effort was not terribly successful (only describing a small portion of the observed variation), but given the high temporal frequency and multi-year nature of the data, this seems like a very compelling contribution to this journal.

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Discussion paper

My main two critiques are about the paper's structure and number of figures. On the first point, there are many grammatical errors that distract from the message of the paper. Starting from the first lines of the abstract through the end of the paper, a thorough, line-by-line treatment is needed. More generally, the paper would greatly benefit from a thorough revision at the paragraph and section levels. Making sure there are clear topic sentences for each paragraph and that each section has a logical progression would help readers appreciate the importance of these findings. On the second point, there are many figures that are better suited for the supplementary information. Currently, including the background meteorological figures before getting to the response variable of interest (CH4 flux) reduces the focus and punch of the findings. Focusing on a few key figures (for example 5, and 11-14) would improve the paper.

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