This study studied the factors of land use and bedrock on protein depolymerization across a 4000-km transect in Europe, and highlighted the important role of climate and soil properties on N cycling at large scales. The sampling scheme is attractive, and many interesting biochemical indicators are measured. This study stated N cycling was controlled by substrate availability. This conclusion is not novel, actually which has been widely acknowledged for a long time. Generally, I think this paper fits the scope of this Journal, however, more should be added to highlight the novelty of this study. Some conclusions are confusing, the author had clarified the importance of substrate availability, which was related with OM input or vegetation, however, it also declared that the land use effect was insignificant. Those ideas are not consistent. It’s better to clarify them. Besides, the writing should be improved. For instance, some paragraphs lack the key points, and some sentences are confusing or too long to understand. See the details as follows.

Line40: The key point of this paragraph is not clear, clarify it. And since land use is your main sampling scheme, you can introduce more about it.

Line 50. This reference was in contrast with your contents, discuss it later.

Line 64, add reference.

Line96, what’s the depth of the ‘organic layers’?
This sentence is confusing, please rephrase it.

Simplify the sentences

It’s confusing in 4.1. ‘land use had no effect on the response of depolymerization rates’, however, above discussion was talking about the differences in different land use, and even attributed the difference to soil pH.

pH was the main predictor in results, but the contribution of texture, mineral assemblage, how are they related to N cycling?

I don’t think this indicate that ‘stabilized compounds are available for microbial utilization’

Add reference

this sentence is confusing, please simplify it

add support for this opinion

Do you mean that the climate factors influence soil pH and then regulate the depolymerization rates? However, your data doesn’t seem to support this, please explain it.

can you compared the contributions in the combined model including land use, soil properties, climate together?

It’s confusing, ‘peptidase activity is a proxy of microbial N or N limitation’?

‘black arrows’ are missing in the figure. And how to identify the direct and indirect effects?