

Dear Taimur Khan,

Thank you for the community comment on our manuscript submitted to Biogeosciences. We note that the comment does not contain any detailed discussion of fire, land cover or Europe and the comments are fairly generic. Sometimes the comments do not fit – for example the statement, “it could be strengthened by... how the BASE model could be refined or extended to improve its predictive power”, we do in fact discuss exactly this – both for NCV and Cropland burning. Furthermore, the writing style looks very much like it was produced by a generative AI, and running the text through a couple of online tools suggests that this is indeed likely to be the case.

This is not to say that such comments automatically don't have merit (although they are no replacement for expert peer-review), so we will address them briefly here. The key points are strengthening the Discussion and clarifying methodological assumptions and uncertainties. With regards to the Discussion, it is already extensive and following some further suggestions from reviewers 1 and 2, we feel, complete. Because this work does not include future projections or apply at the landscape scale, we feel that the suggestion of “policy implications” is not appropriate here, although see Hetzer *et al.* 2024 for related work which include future projections of meteorological fire risk in Europe and policy implications.

As for methodological detail and uncertainties, we feel we have fully documented our methods and in fact already gone a little further than the previous studies in the field in discussing these issues - in particular our discussion of spatial autocorrelations and their effect on estimated uncertainties (which motivated our decision to use Shapley variable importance instead of t-values), discussion of uncertainty in the satellite data, the consequences of using a *quasi* family in the GLM, and our discussion of interaction terms. We do not feel that there are any outstanding methodological issues to discuss.

References

Jessica Hetzer *et al* 2024 *Environ. Res. Lett.* **19** 084017