Author Comment (AC)
Response to Referee #1 (All comments)

Manuscript: "A ground motion prediction model for the Italian region based on a mixture of experts framework"

Referee #1 – Additional follow-up (Sensitivity to validation design under identical conditions)

The referee acknowledges our commitment to implementing strict grouped-by-event cross-validation, and further emphasizes that the methodological robustness would be strengthened by explicitly quantifying how performance and residual-variability metrics change relative to the previously adopted record-wise evaluation, under identical dataset and predictor conditions. This comparison would improve transparency and allow readers to assess the sensitivity of the results to the validation design.

Author response

We thank the referee for this further clarification and fully agree with the underlying point. Beyond incorporating a strict grouped-by-event cross-validation scheme, it is important to explicitly quantify the sensitivity of the reported results to the choice of validation design under identical dataset and predictor conditions.

Accordingly, in the revised manuscript we will include an additional controlled comparison in which the dataset and model input configuration are kept unchanged and only the validation strategy is varied (record-wise evaluation versus grouped-by-event cross-validation). We will present this comparison as a complementary sensitivity analysis, reporting the resulting differences in evaluation outcomes side-by-side. We believe this addition will improve transparency, facilitate a more robust interpretation of the model performance and residual-variability findings, and further strengthen the scientific value of the study.

Concluding note

We again thank the referee for the constructive guidance. We believe that the above addition, together with the strict grouped-by-event evaluation already planned, will directly address the remaining methodological concerns and will provide a clearer, more robust basis for the manuscript's main conclusions.