

Supplementary Figures

A Bayesian Parametric Ground-Motion Prediction Model: Response Spectra of Shallow Crustal Seismicity in Europe

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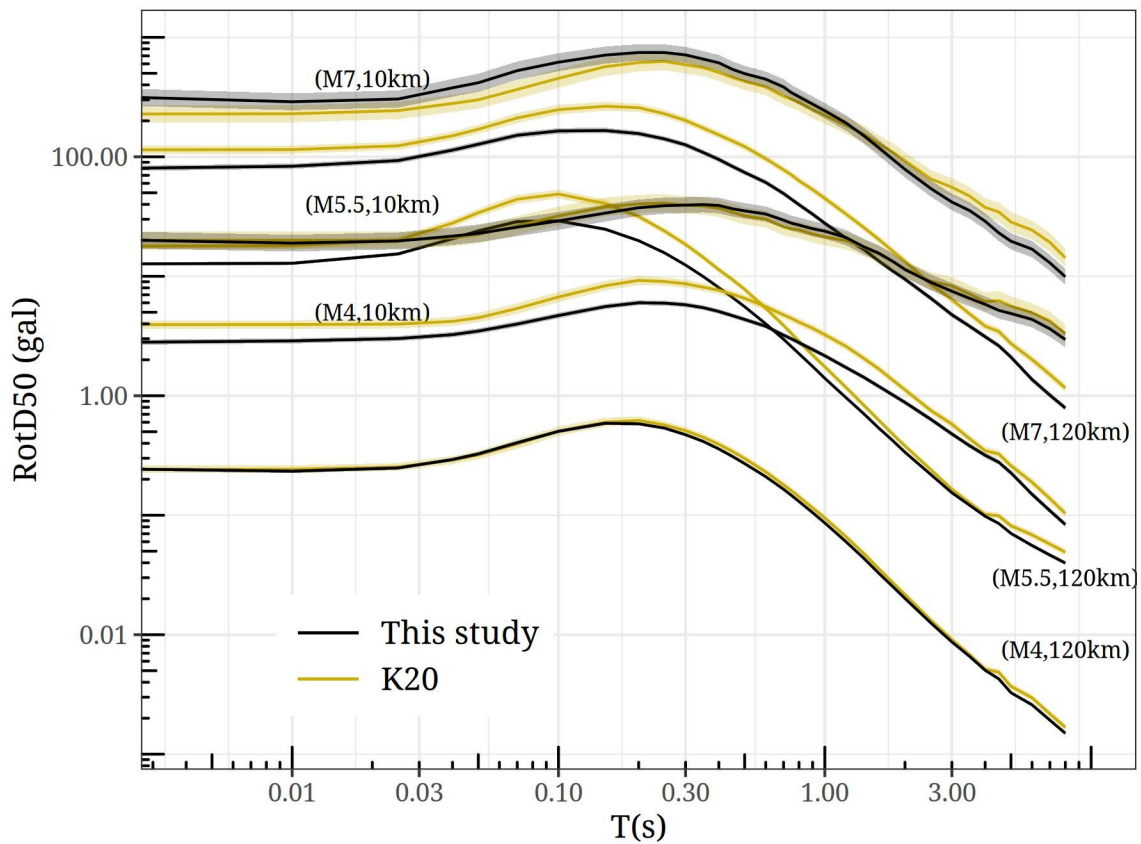


Fig S1. Predicted response spectra of the GMPM for various scenarios compared with K20; for three earthquake magnitudes (M 4, 5.5 and 7) and two source-to-station distances (R 10 and 120 km). Black curves represent the present model; yellow curves the model of Kotha et al. (2020).

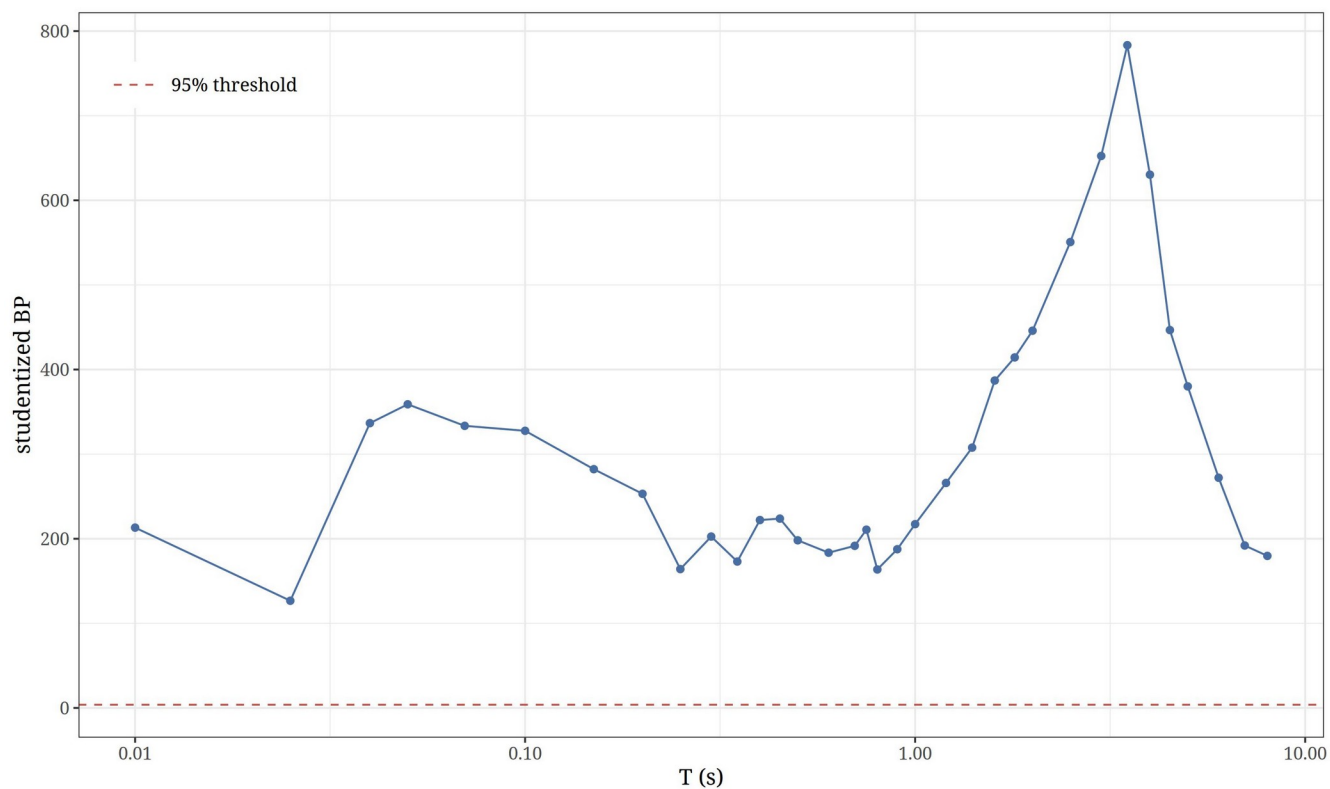


Fig S2. Studentised Breusch Pagan test for all periods. The studentised BP statistic is well above the reference value, suggesting that the null-hypothesis of absence of heteroscedasticity can be rejected at 95% significance.

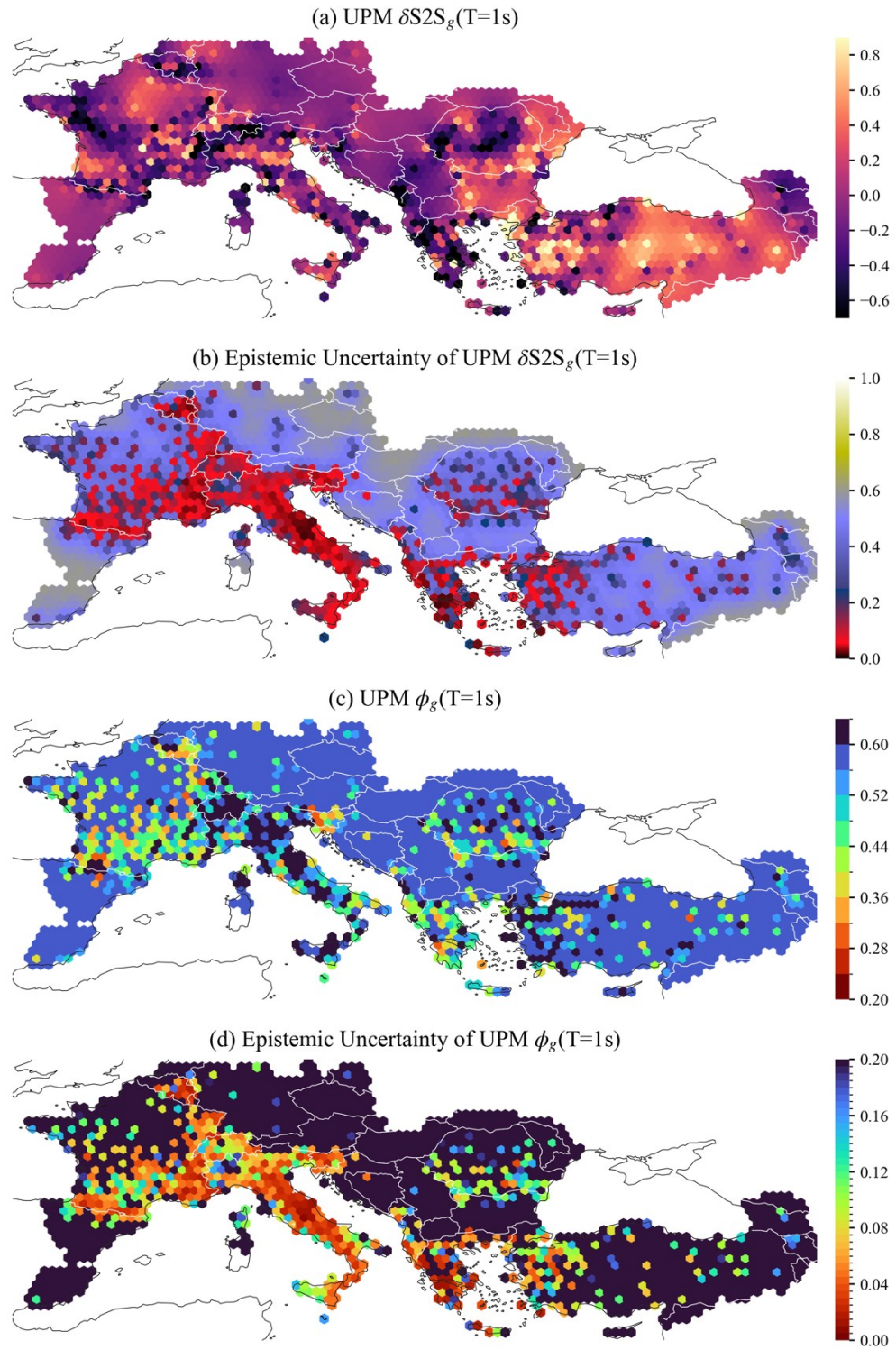


Fig S3. Continental-scale UPM maps of Europe at $T=1s$: (a) $\delta S2S_g$, (b) epistemic uncertainty of $\delta S2S_g$, (c) ϕ_g , and (d) epistemic uncertainty of ϕ_g . Figure extract from Chakraborty et al. 2026 – in prep.

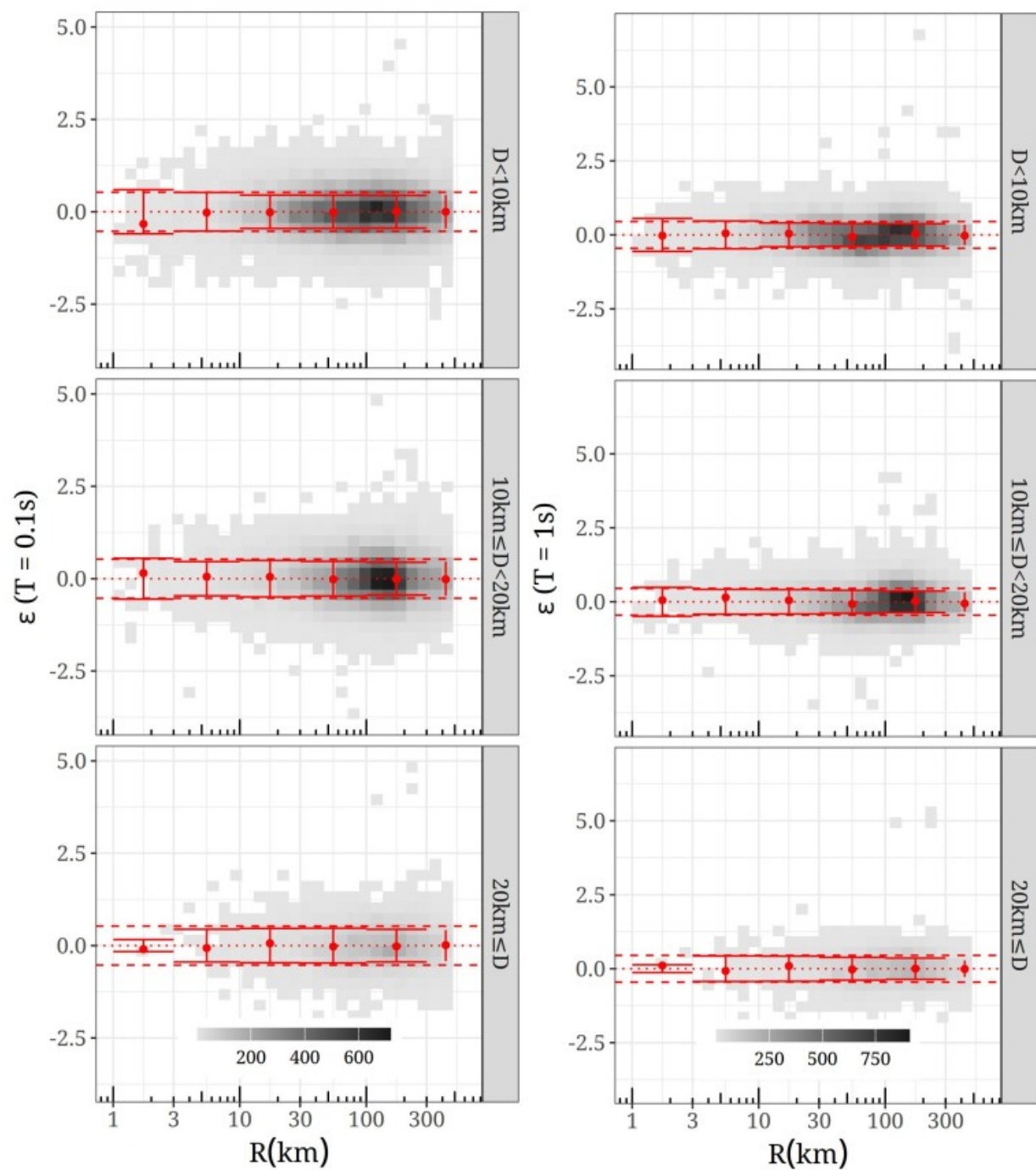


Fig S4.

Fig S4. Aleatory residual trends with distance for different event depths ($D < 10$ km, $10 \text{ km} \leq D < 20$ km, $20 \text{ km} \leq D$) for $T = 0.1$ (left panel) and $T = 1.0$ s (right panel).

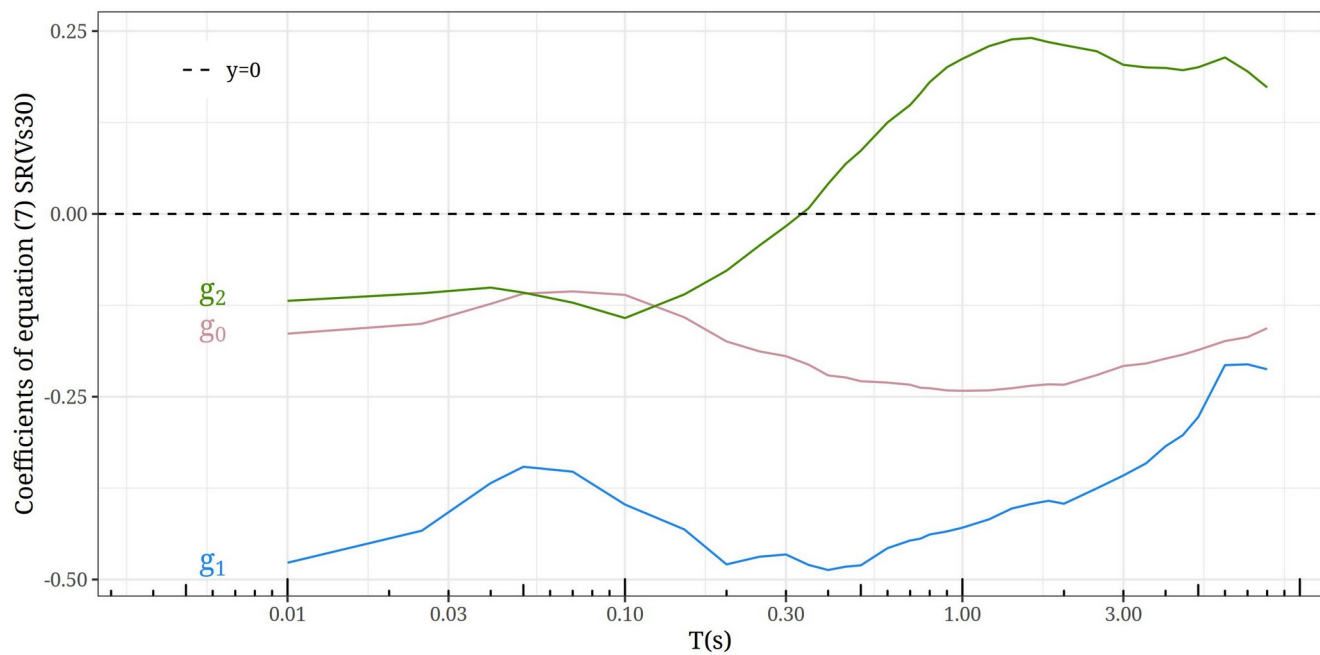


Fig S5. Time dependence of the coefficients from the equation 7 SR(Vs30) modeling d2s2 with vs30 at each period.