

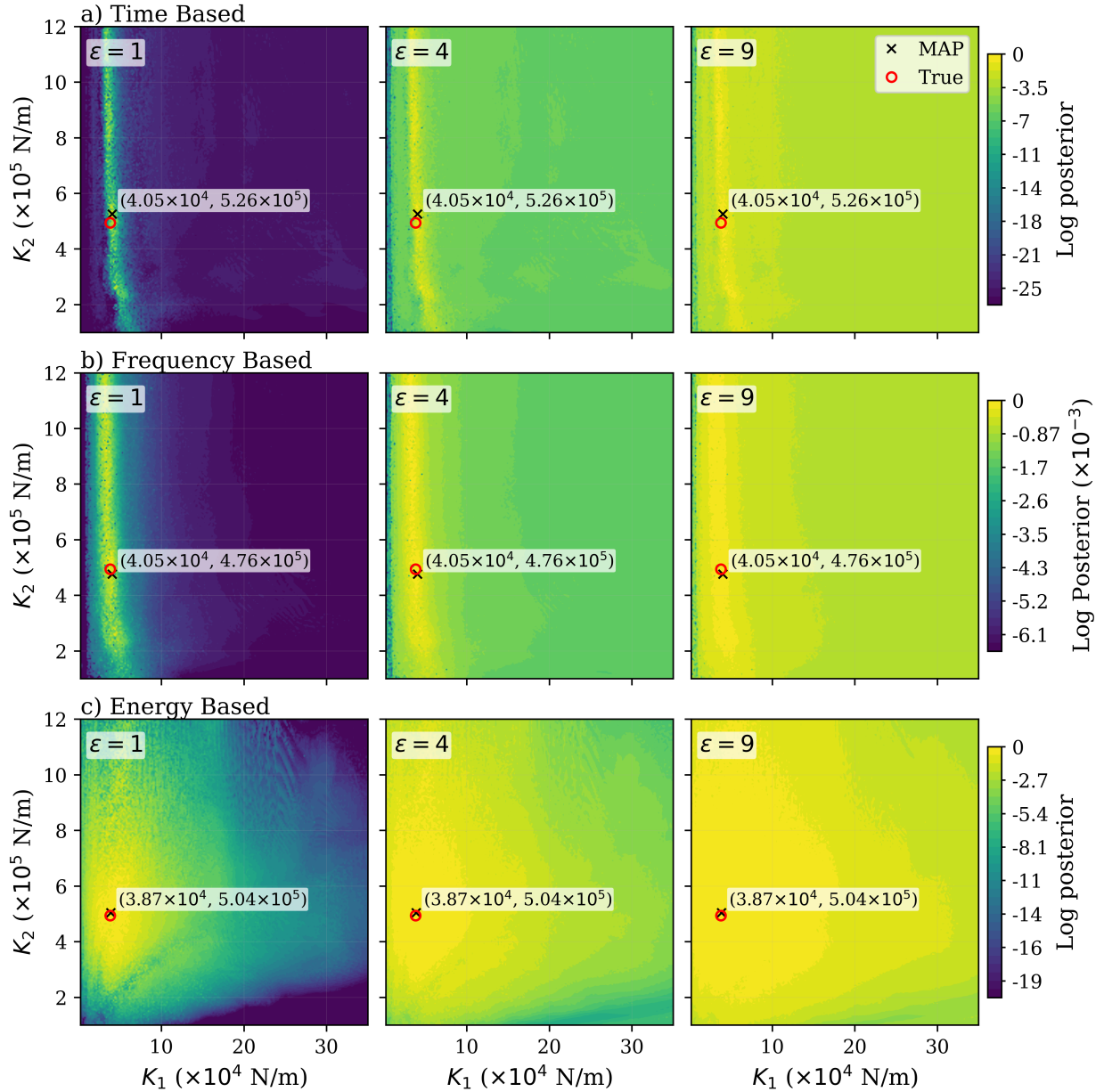
1 **Supplementary Information to "Bayesian Updating of Pole-Cable Systems**
2 **for Damage Quantification after Sequential Extreme Events"**

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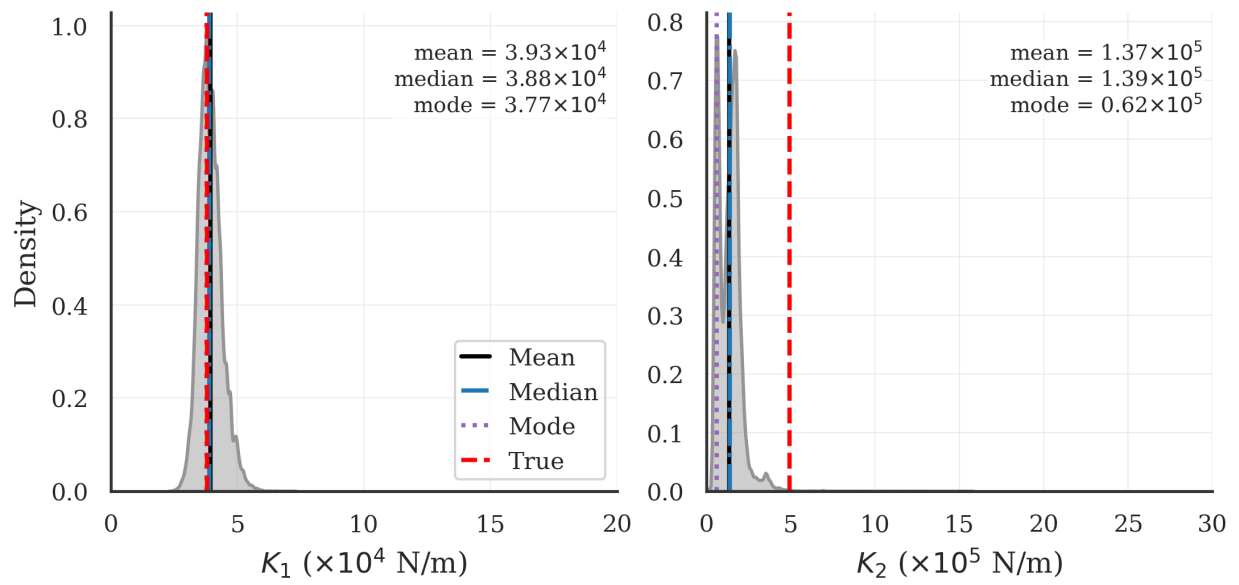
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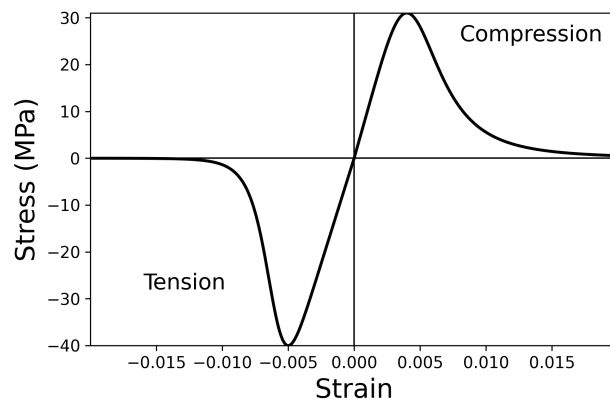
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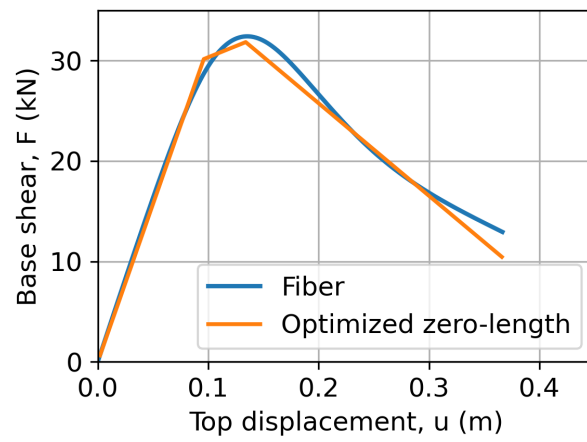
Supplementary Figure S1. Log-posterior surfaces for estimating the stiffness parameters K_1 and K_2 using the 40 s Northridge-Newhall ground motion response. Rows show likelihoods based on time-domain response, frequency-domain FFT amplitudes, and normalized cumulative FFT energy, while columns show $\epsilon = 4, 9$, and 16 . The black cross marks the maximum a posteriori estimate, and the red circle marks the true parameter values.



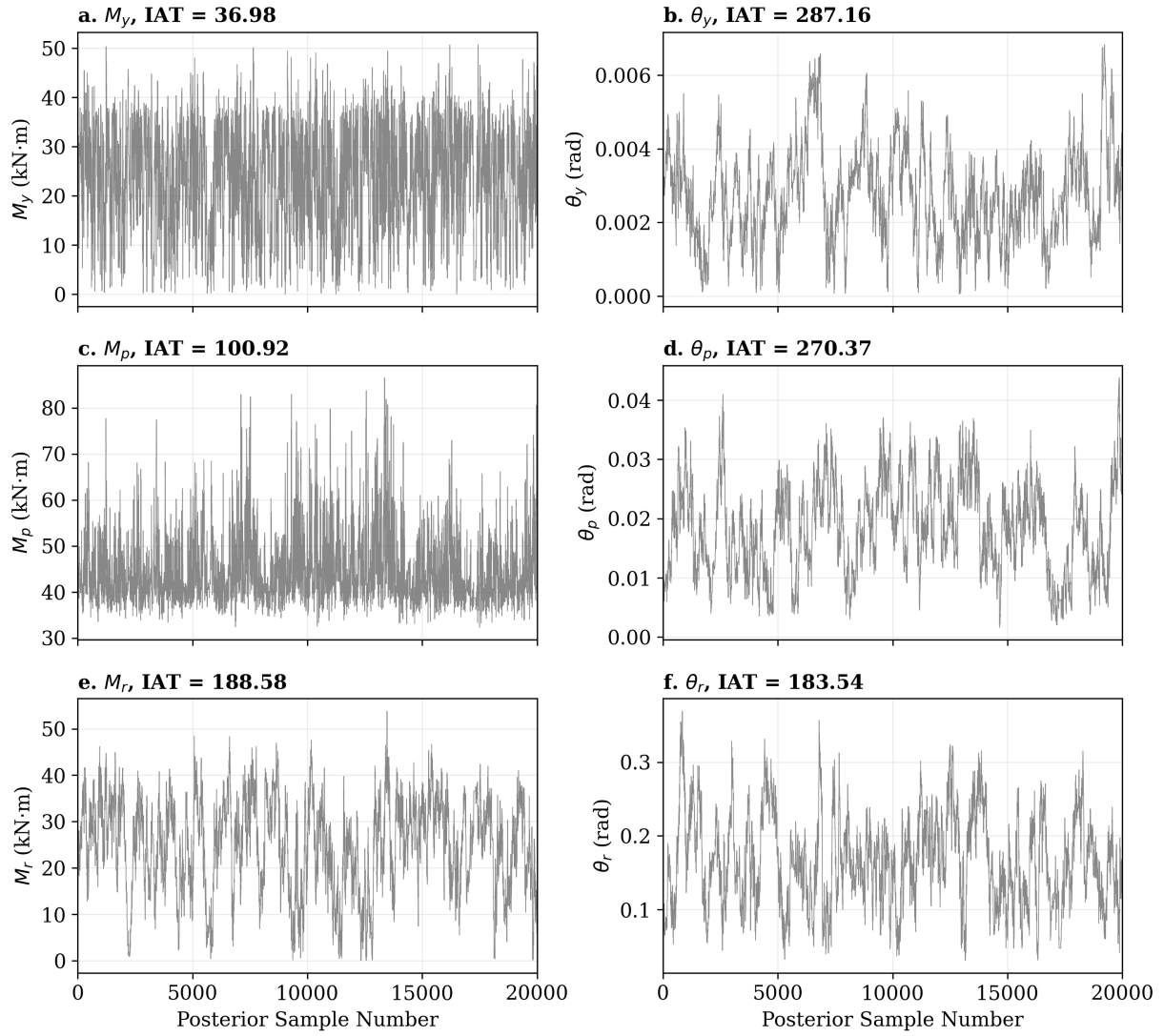
Supplementary Figure S2. Posterior distribution of K_1 and K_2 using information on left sensor only.



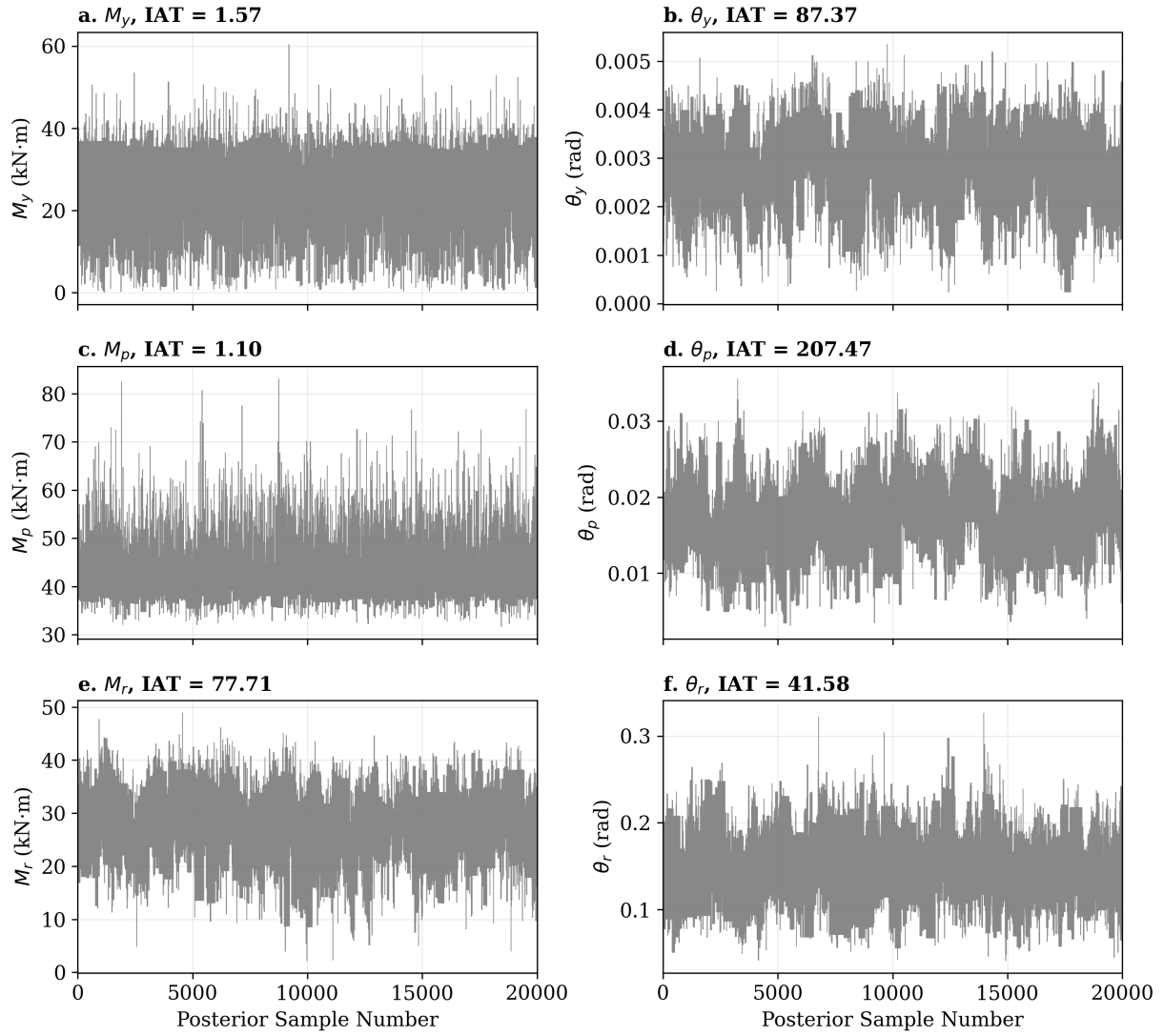
Supplementary Figure S3. Stress–Strain relationship of wooden pole fibers.



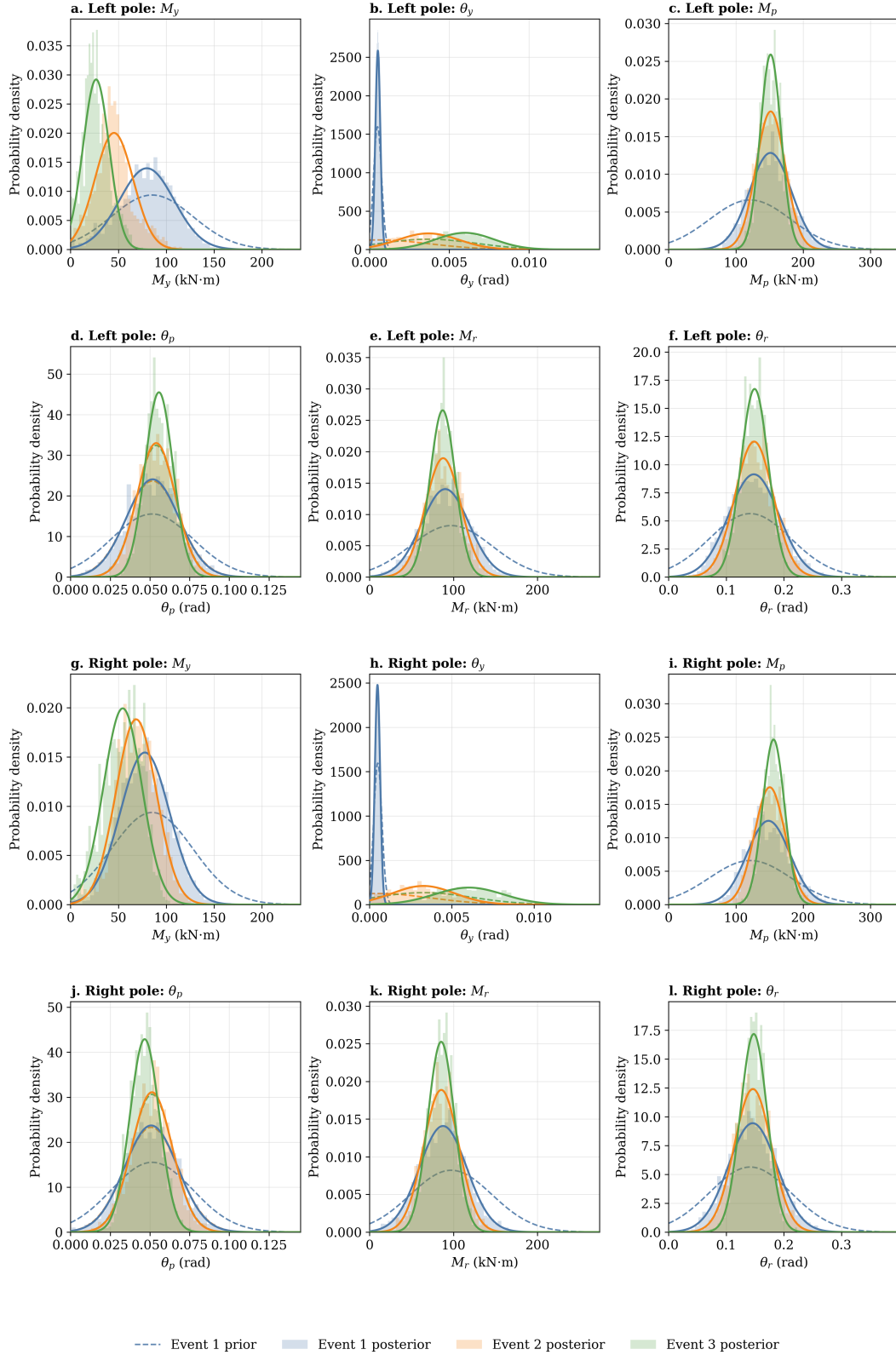
Supplementary Figure S4. Pushover curve match for the simplified model and fiber model



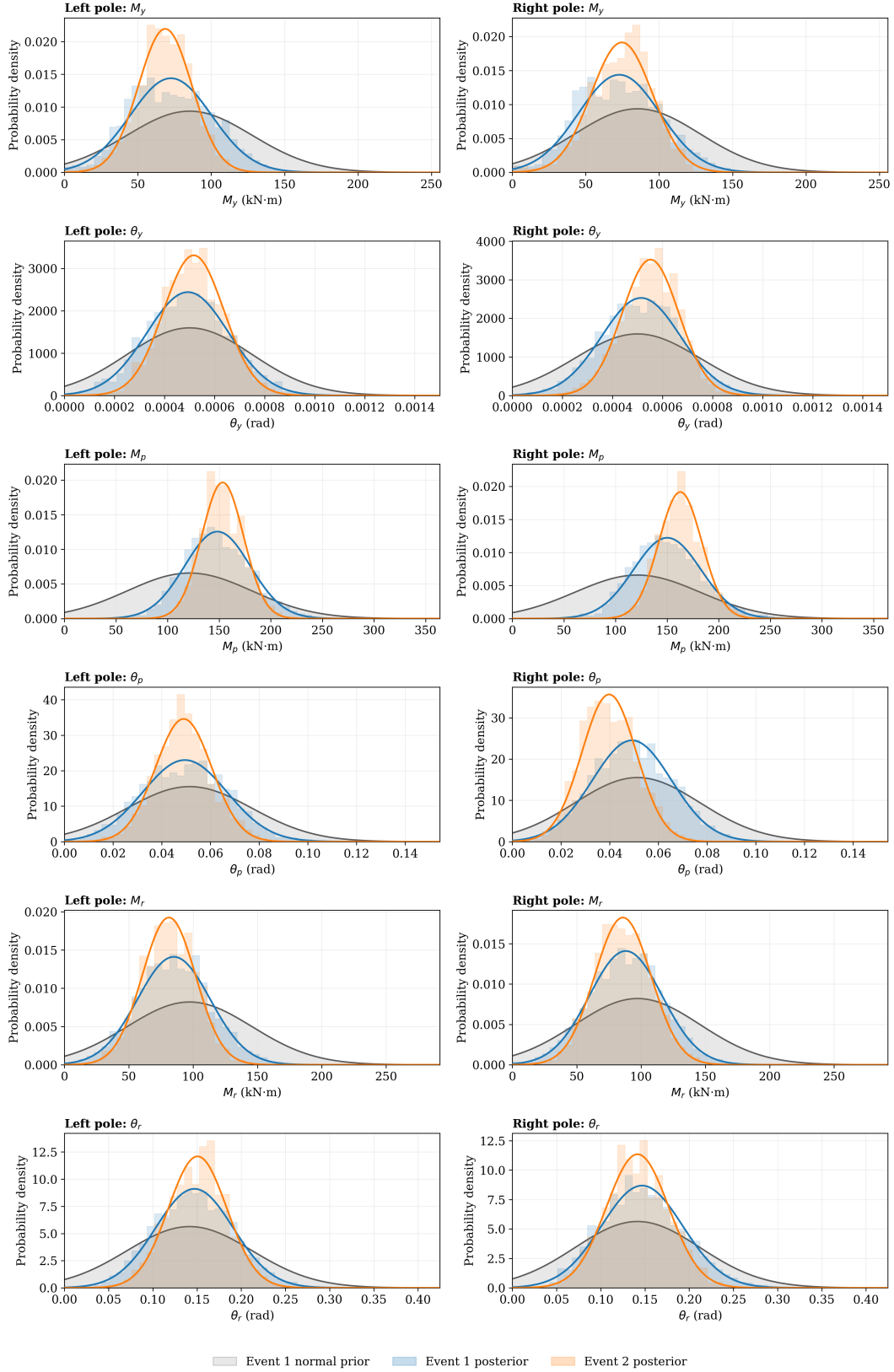
Supplementary Figure S5. Trace plot for posterior parameters for low-fidelity representation of the wooden pole for updates with one walker.



Supplementary Figure S6. Trace plot for posterior parameters for low-fidelity representation of the wooden pole for updates with 20 walkers using Teleport MCMC algorithm.



Supplementary Figure S7. Parameter Updates after each event when information on both the poles is available during 100%, 200%, and 300% of scaled ground motion recorded at Newhall Station during 1994 Northridge earthquake.



Supplementary Figure S8. Parameter Updates after each event when information on both the poles is available during 200%, and 250% of scaled ground motion recorded at Newhall Station and Rinaldi Station respectively, during 1994 Northridge earthquake.