

## Accepted Manuscript

A Bayesian finite element model updating with combined normal and lognormal probability distributions using modal measurements

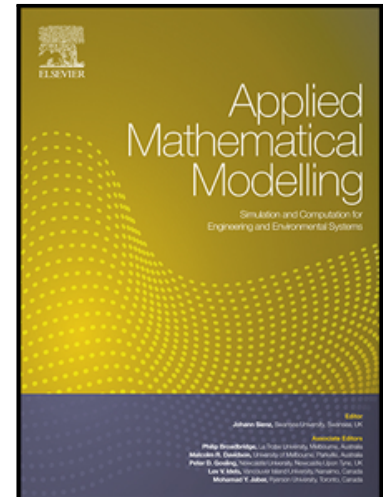
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**Highlights:**

- A Bayesian approach combining normal and lognormal distributions is formulated in details based on maximum a posteriori.
- Estimation of uncertainty and probabilistic change/damage is also developed.
- Compared with maximum a posteriori based Bayesian updating using normal distribution.
- Computational efficiency is compared with Markov Chain Monte Carlo (MCMC) based updating techniques.
- With no need of mode matching, such updating remains possible for large structures.

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