

## **Calibration of Constitutive Adhesion Models**

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There has been an increase in the use of composite materials in engineering designs which motivated the development of reliable procedures to connect components with adhesives. As a consequence, there is a natural demand for reliable adhesion models that can be used in simulation based design environments. In this work we propose an approach to calibrate constitutive adhesion models. Here, we chose to use the constitutive model proposed by Raous which was built based on thermodynamics of irreversible processes with internal variables. The inverse problem associated to the model calibration is solved by means of Bayesian analysis. Samples of the unknown model parameters are obtained via Population-Based Markov-Chain Monte Carlo combined with Adaptive Metropolis algorithms. Some numerical results are presented for situations in which we try to reproduce real-like operational\feasible conditions.

**Keywords:** Adhesion Model, Model Calibration, MCMC, Population Based, Adaptive Metropolis