

Abstract Submitted  
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**Sensitivity Analysis of strength models using Bayesian Adaptive Splines**<sup>1</sup> KATHLEEN SCHMIDT, JASON BERNSTEIN, NATHAN BARTON, JEFF FORANDO, ANA KUPRESANIN, Lawrence Livermore Natl Lab — Through sensitivity analysis we study how variability of the output of a strength model can be apportioned to different sources of uncertainty in the model input. Determining these relationships has become a first step in the use of strength models that precedes their calibration to experimental data. We discuss the Bayesian approach to multivariate adaptive regression splines (BMARS) as an emulator of a strength model for the purpose of sensitivity analysis without Monte Carlo error. We show that the BMARS formulation is well suited for functional output like stress-strain curves and we extend the global sensitivity indices to functional outputs.

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