Sessions

SESSION 2: Markov Chain Monte Carlo Methods
SESSION 9: Uncertainty Quantification
SESSION 16: Robustness to Lack of Knowledge in Design & Validation
SESSION 24: V&V Method Development
SESSION 32: Uncertainty Quantification and Propagation in Structural Dynamics
SESSION 40: Verification and Validation Applications

Organized by:
SEM/IMAC Model Validation and Uncertainty Quantification (MVUQ) Technical Division

Numerical models and simulations, regardless of how articulate they may be, are approximate representations of the actual systems they represent. Verification and Validation (V&V) practices, along with uncertainty quantification (UQ) activities, supply the means to establish credibility in model predictions in a quantitative and objective manner. Model verification ensures that the mathematical model is being solved correctly while model validation ensures that model is sufficiently credible representation of reality. Uncertainty quantification seeks to evaluate the effects of uncertainties that originate from numerous sources and track the propagation of those uncertainties to the final prediction(s) of the model. MV&UQ processes are necessary to ensure that advanced numerical models may be relied upon with confidence.

At IMAC-XXXIV there will be six MV&UQ sessions. The two Monday sessions will focus on Uncertainty Quantification. Tuesday morning, the MV&UQ sessions will continue with a session organized by Dr. Scott Cogan on Robustness against Uncertainty, and in the afternoon with a session on novel methodology development in model verification and validation. Wednesday morning, a full session organized by Dr. Babak Moavi and Costas Papadimitriou will focus on Uncertainty Quantification and Propagation in Structural Dynamics during which a tutorial on Uncertainty Quantification and Propagation in Structural Dynamics by Geert Lombaert. The final MV&UQ session on Wednesday afternoon will discuss applications of V&V/UQ techniques.