



Einladung zum Vortrag

Uncertainty Quantification with Surrogate Models for Plastics Flow in Manufacturing Engineering

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Zusammenfassung: With the help of simulation-based tools, we wish to make reliable assertions and predictions for quantities of interests (QoI), also in the presence of uncertainty. Thus, methods from Uncertainty Quantification (UQ) can enhance the quality of processes and products through quantified probability measures. We consider sampling-based UQ methods that usually require a great number of model evaluations. Here, using surrogate models, which are computationally cheaper, may be necessary. Therefore, we first explore the benefits of intrusive Model Order Reduction (MOR) techniques. As an alternative, we also investigate the advantages of Gaussian Process Regression (GPR) as a meta-model. Finally, the integration of the resulting surrogate models into a UQ setting is demonstrated for applications coming from polymer processing.

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