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Sensitivity Analysis, Uncertainty Quantification and Predictive Modeling of Nuclear Energy Systems

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Message from the Guest Editor

This Special Issue of *Energies* presents ongoing progress and remaining challenges in sensitivity analysis, uncertainty quantification, model validation, and predictive modeling of nuclear energy systems.

As is well known, the results of measurements and computations are never perfectly accurate. On the one hand, results of measurements inevitably reflect the influence of experimental errors, imperfect instruments, or imperfectly known calibration standards. On the other hand, computations are afflicted by errors stemming from imperfectly known physical processes, problem geometry, known model parameters, boundary and initial conditions, and approximate numerical procedures. Therefore, knowing just the nominal values of experimentally measured and/or computed quantities is insufficient for applications. The quantitative uncertainties accompanying measurements and computations are also needed. Predictive modeling aims at extracting “best estimate” values for model parameters and predicted results, together with “best estimate” uncertainties for these parameters and results...



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Special Issue



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Message from the Editor-in-Chief

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