



Sensitivity Analysis, Error Propagation, Uncertainty Quantification, and Verification and Validation

Of critical importance is the study of the effectiveness of our computational physics enterprise. This section deals with various techniques to study, and improve, the accuracy of our simulation tools ultimately driving us closer to true scientific predictive capability. Two articles are presented that utilize statistical sciences to help in this regard. The first is about statistical models to tame the complexities of assessing the reliability of the enduring nuclear stockpile from a myriad of data and information sources. The second presents a discussion of the use of a statistical approach in the quantification of uncertainties in coupled physics simulations. The third article in this section describes a methodological approach to quantifying the accuracy and convergence of a particular numerical hydrodynamic algorithm.