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parameter calibration for simulations of three-phase injector flows -- 10. Hijazi, S. et al., Non-Intrusive Polynomial Chaos Method Applied to Full-Order and Reduced Problems in Computational Fluid Dynamics: a Comparison and Perspectives -- 11. Bulté, M. et al., A practical example for the non-linear Bayesian filtering of model parameters.

| Sommario/riassunto | This book explores four guiding themes – reduced order modelling, high dimensional problems, efficient algorithms, and applications – by reviewing recent algorithmic and mathematical advances and the development of new research directions for uncertainty quantification in the context of partial differential equations with random inputs. Highlighting the most promising approaches for (near-) future improvements in the way uncertainty quantification problems in the partial differential equation setting are solved, and gathering contributions by leading international experts, the book's content will impact the scientific, engineering, financial, economic, environmental, social, and commercial sectors. |