



Announcement

ASME Journal of Mechanical Design Special Issue 2012: Design under Uncertainty

Uncertainty is ubiquitous in engineering design. There are theoretical and computational challenges associated with many aspects of design under uncertainty. While various approaches exist, some are ad-hoc in nature. It is therefore imperative to develop theoretically sound, self-consistent, and computationally efficient methods to support design under uncertainty. Consequently, the *ASME Journal of Mechanical Design* calls for submissions for a special issue on *Design under Uncertainty*. Topics can include, but are not limited to the following:

- Theoretical foundations and frameworks for design under uncertainty
- Strategies and methods for uncertainty reduction and risk management in design
- Preference modeling and elicitation in design under uncertainty
- Uncertainty representation and quantification
- Elicitation and aggregation of uncertain information
- Representation and prediction of emergent behavior under uncertainty
- Theoretical foundations for predictive modeling and inference with limited data
- Computational techniques for uncertainty propagation
- Model verification, validation, and uncertainty quantification
- Multi-fidelity and surrogate modeling for design under uncertainty
- Stochastic methods for design of multiscale engineering systems
- Information systems for supporting design under uncertainty
- Communication of uncertainty analysis results
- Teaching design under uncertainty
- Case studies and industrial design applications that illustrate comprehensive treatment of uncertainty

The special issue also welcomes papers that closely examine the theoretical foundations of the various existing approaches and their relative merits. While application areas are not limited to a specific domain of interest, we encourage submissions that address uncertainty issues in designing complex, emerging engineering systems with life-cycle and sustainability considerations. We also encourage papers from authors in fields outside of mechanical engineering (e.g., mathematics, statistics, decision theory, economics, computer science, business, psychology, social science, public policy, etc.). Although the inclusion of a design case study is not mandatory, the design context under which the methods can be used needs to be clearly stated in all submissions — relevance to engineering design will be explicitly considered as a criterion in the review process.

Submission Instructions

Please submit your paper to ASME at <http://journaltool.asme.org/Content/index.cfm> and note on the cover page that your paper is intended for the special issue on “Design under Uncertainty”. Please also email the Editor, Dr. Panos Papalambros at editor@asmejmd.org, to alert him that your paper is intended for the special issue. Information about the *Journal of Mechanical Design* can be found at <http://www.asmejmd.org/index.php>. *Please note that a limit of 12 journal pages without ASME page fees will be observed.*

Publication Target Dates

Authors submit papers by: January 15, 2012
 Initial review completed by: May 15, 2012
 Publication of special issue by: October 2012

Papers submitted by January 15, 2012 will be reviewed in time for inclusion in the special issue. Papers received after that date will still be considered for the special issue, if time and space permits. Otherwise, accepted papers will appear in a later issue of the journal.

Special Issue Editors

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