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Special Issue on Modeling and Analysis of Inspection Uncertainties in Structural Health Monitoring (SI059B)

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Special Issue on Modeling and Analysis of Inspection Uncertainties in Structural Health Monitoring (SI059B)

In recent years, structural health monitoring (SHM) technology has developed rapidly and is now gradually applied to civil, mechanical, automobile, and aerospace engineering practices. One of the most widely-held concerns is to utilize useful information provided by SHM for quantitative assessment of structural health and updating structural models. To accomplish this, inspection or measurement information is gathered through monitoring, followed by a thorough analysis that uses finite element analysis models, mathematical statistics tools, artificial intelligence technologies, or other advanced methods to obtain an objective quantitative assessment of structural health or updating structural models. However, due to uncertainties in mathematical modeling and analysis in SHM, objectives for satisfactory results of the quantitative structural health assessment and structural model updating have not been fully realized in real-world conditions, and many problems still require further research.

Topic Areas

This Special Issue aims to report the latest advances and challenges related to the various aspects of SHM and uncertainties in modeling and inspection analysis, including theoretical, computational, practical, and application aspects. Potential topics include, but are not limited to:

- Latest methods for SHM data processing
- Data-driven approaches for SHM and uncertainty modeling
- Advanced techniques for sensor placement, field testing, and SHM system design
- Uncertainty modeling and quantification of SHM-derived features and indicators
- SHM techniques in model updating, damage detection, and safety evaluation aspects
- Applications of SHM in civil, mechanical, automobile, and aerospace engineering

Publication Target Dates

Paper submission deadline	July 31, 2023
Initial review completed	October 31, 2023
Special Issue publication date	March 2024

Submission Instructions

Papers should be submitted electronically to the journal at journaltool.asme.org. If you already have an account, log in as an author to your ASME account. If you do not have an account, sign up for an account. In either case, at the **Paper Submittal** page, select the [ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering](#) and then select the Special Issue **Modeling and Analysis of Inspection Uncertainties in Structural Health Monitoring (SI059B)**. Papers received after the deadline or papers not selected for inclusion in the Special Issue may be accepted for publication in a regular issue.

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