Special Session

Probabilistic Monitoring and Assessment of Civil Structures

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In structural health monitoring we acquire data using sensors to determine the condition state of a structure. The process of data interpretation is basically a logical inference problem. Measurements gained from monitoring campaigns are inevitably affected by noise and environmental factors and they are only indirectly related to the structural condition. Any metric derived from measurements is thus a random variable and key questions are how to provide a diagnosis that properly accounts for the statistical nature of the process and how to bridge the gap between the data gathering and its processing and the decisions that must be made regarding maintenance, repair and replacement.

The goal of the session is to bring together researchers working on statistical data interpretation, probabilistic identification and modeling, structural risk assessment, and decision making. **Contributions are invited in structural reliability, probabilistic analysis, Bayesian logic, data and algorithm fusion, and risk analysis**, including economic and social aspects that affect decisions in SHM and structural assessment applications.