Session ID: SHM-3

Title
ADVANCED AND INTEGRATED STRUCTURAL HEALTH MONITORING SOLUTIONS FOR CRITICAL INFRASTRUCTURE

Convenors
E. Kalkan [1], J. Parol [2]

Description
Effective Structural Health Monitoring (SHM) solutions play a critical role in ensuring the safety, reliability, and longevity of critical infrastructure such as bridges, skyscrapers, tunnels, and dams. These structures are subjected to various environmental and loading conditions that can cause deterioration and damage, leading to structural failure if not detected and addressed in a timely manner. In recent years, significant advancements have been made in SHM technologies, including the development of high-performance sensors, advanced data analytics, and machine learning algorithms. These technologies enable the collection, processing, and analysis of vast amounts of structural data, enabling early detection of damage and enabling timely interventions to mitigate the risk of failure.

The proposed session aims to showcase the latest research and innovative approaches in advanced and integrated SHM solutions for critical infrastructure. The session will bring together researchers, engineers, and industry experts to present their work and discuss the latest trends, challenges, and opportunities in the field.

The topics covered in the session will include, but are not limited to:
- Advanced sensing technologies for structural health monitoring
- Data analytics and machine learning for structural health assessment and damage detection
- Integrated SHM solutions for critical infrastructure
- Wireless sensor networks for SHM
- SHM for extreme events such as earthquakes, windstorms, and floods
- Case studies and real-world applications of SHM in critical infrastructure
- Cost-benefit analysis of SHM implementation

The session will provide a platform for participants to share their knowledge, experience, and expertise in SHM and exchange ideas and perspectives on the challenges and opportunities in the field. The session will also facilitate networking and collaboration among participants, paving the way for future research and innovation in SHM for critical infrastructure.

Invited Speakers
T. Herring [3], C. Malaga-Chuquitaype [4], A. Haridas [5], E. Chatzi [6], O. Mercan [7]

Affiliations
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