

IMPORTANT DATES

July 7/18, 2021

Abstracts due to SEM.

Mid August 2021

Authors notified, via e-mail, of acceptance/rejection.

October 18, 2021

Accepted authors are required to submit final paper electronically.

January 5, 2022

Accepted authors required to submit video presentation electronically.

JOIN US IN ORLANDO, FLORIDA!

This is your invitation to join us in person in February and share the vision of Dick DeMichele who initiated this conference and set it on its course. One of the unique attributes of IMAC, nurtured over the years, is the mix of analytical and experimental topics, bringing the analyst and the experimentalist together as a team. The traditional barriers have been removed to foster constructive dialog among academics, industry and the governmental labs. It is from these meetings that technologies are shared, enhancing our aerospace industries, infrastructure, our educational endeavors and improving society in general.

IMAC-XL is being planned as an in-person event at the Rosen Plaza Hotel in Orlando, Florida, USA. Your safety and wellness are our number one priority. SEM will work diligently to follow all CDC guidance and all state and local health mandates. Should health metrics or conditions change, to ensure a successful virtual IMAC-XL, we ask that all submitting authors provide, in addition to a paper, a pre-recorded 10-15 minute video. Details and updates can be found at www.sem.org/IMAC. The decision on whether IMAC-XL will be held in-person or virtually will be made late summer/early fall 2021.

IMAC remains a friendly conference where exhibitors, presenters and attendees spend several days exchanging the ideas that fuel the coming year.

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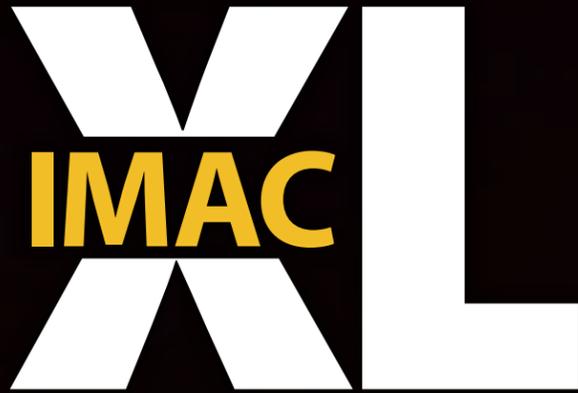
IMAC XL

**A CONFERENCE AND EXPOSITION
ON STRUCTURAL DYNAMICS**

THE HUMAN EXPERIENCE OF
SOUND AND VIBRATION

**FEBRUARY 7-10, 2022
ORLANDO, FL**

CALL FOR PAPERS



IT'S NOT JUST MODAL ANYMORE

THE HUMAN EXPERIENCE OF SOUND AND VIBRATION

IMAC is a conference and exposition focusing on structural dynamics and has evolved to encompass the latest technologies supporting that field. This broad focus on structural dynamics includes topics in modal analysis, nonlinear dynamics, data science, uncertainty quantification, and many other related topics spanning the full range of engineering disciplines. This year we are focusing on "The Human Experience of Sound and Vibration," our theme for IMAC-XL. We invite proposals for paper presentations at IMAC-XL focused on the conference theme as well as on broader topics related to structural dynamics listed in this call.

We also encourage everyone to get involved with the various technical divisions within the Society, submit your paper for a best paper competition, or nominate someone for an award. Your participation and ideas are needed to keep IMAC responsive to the needs of the structural dynamics community. Be sure to visit the web site to learn more about IMAC and our community.

TRACK: DATA SCIENCE IN ENGINEERING

- Deep learning-based computer vision for classification and prediction
- Big data and sensor fusion in structural health monitoring
- Artificial Intelligence and Machine learning for digital twins (Metamodeling and surrogate modeling)
- Machine learning on embedded systems (Internet of Things (IoT), tiny ML)
- Compressive Sensing and Sparse datasets in Data science
- Data science in Additive manufacturing
- Data science for numerical simulations

TRACK: DYNAMIC SUBSTRUCTURES

- Dynamic Substructures
- Transfer Path Analysis & Vehicle NVH
- Experimental Dynamic Substructuring
- Industrial Applications of Dynamic Structuring
- Hybrid and Real-time Substructuring
- Uncertainty Propagation in Dynamic Substructuring

TRACK: DYNAMICS OF CIVIL STRUCTURES

- Bridges
- Buildings
- Human Induced Vibrations
- Vibration Serviceability
- Nonlinear Vibrations
- SHM of Civil Structures
- Structural Control for Civil Structures

TRACK: MODAL ANALYSIS & STRUCTURAL DYNAMICS

- Biomedical Applications
- Additive Manufacturing
- Structural Dynamics for Wind Energy
- Boundary Condition Correction
- Aerospace Applications
- Rotor Dynamics and Torsional Vibration Sessions
- Operational Modal Analysis

TRACK: MODEL VALIDATION & UNCERTAINTY QUANTIFICATION

- Uncertainty Propagation and Decision Making in Structural Dynamics
- Fusion of Test & Analysis
- MVUQ in Multi-Physics
- Bayesian Real Time System Identification
- Digital Twins and Prognosis
- Robust Analysis and Quantification of Model Form Uncertainty
- Applications of MVUQ in Cultural Heritage

TRACK: NONLINEAR STRUCTURES & SYSTEMS

- Nonlinear System Identification
- Nonlinear Modes and Modal Interactions
- Joints, Damping, and Friction
- Nonlinear Vibration Mitigation
- Nonlinear Reduced Order Modeling
- Multiphysics Systems and Nonlinearities
- Experimental Nonlinear Dynamics

TRACK: SENSORS & INSTRUMENTATION

- What's New in Industry
- Back to Basics
- Sensing
- Instrumentation

TRACK: OPTICAL METHODS AND COMPUTER VISION FOR STRUCTURAL DYNAMICS

- Laser Vibrometry Applications
- Computer Vision for EMA and OMA
- Digital Image Correlation for Structural Dynamics
- Motion Magnification
- Optical Systems for SHM, NDI, and Load Estimation
- Infrastructures Monitoring and Civil Engineering Applications
- Optical Systems for Dynamic Applications

ABSTRACTS RELATING TO THE FOLLOWING ARE ALSO WELCOME:

- Active Control
- Aerospace Testing Techniques
- Aircraft/Aerospace
- Analytical Methods
- Dynamic Environments Testing
- Energy Harvesting
- Experimental Techniques
- Finite Element Techniques
- Modal Parameter Identification
- Multifunctional Structures
- Rotating Machinery
- System Identification

TECHNICAL DIVISION BEST PAPER AWARDS

Some SEM Technical Divisions offer Best Paper awards within their tracks at both IMAC and the SEM Annual Conference. Award descriptions and guidelines are posted on the individual Technical Division's web pages at sem.org. The abstract submission process has an added step for those authors wishing to be considered for a Technical Division's Best Paper. Check the SEM/IMAC website for details!

SUBMISSION INFORMATION

All abstracts must be submitted electronically via the following abstract submission link: sem.org/imac

Acceptance of a paper is based on the requirement of the author to present the accepted paper at the Conference. Accepted authors are expected to submit either an extended abstract (2-3 pages max, no word limit) or full paper for inclusion in the Proceedings. Note to all submitting authors: Publication of your Proceedings paper requires that you sign the SEM copyright form found at sem.org. The SEM copyright language grants the author the non-exclusive right to use all or part of the work submitted in any book or article written by the author; provided, that the copyright notice which appears on the journal or proceedings in which the work is first published, and a full citation of the publication is affixed to copies of such book or article so as to give reasonable notice of such copyright. Self plagiarism is not allowed. However, publication in an SEM journal of continuing work covering the same topic as published in the SEM Proceedings is highly encouraged. Submit your abstract now!