CRYSTAL INSTRUMENTS

Experimental Modal Measurement and Analysis Seminar with Dr. Pete Avitabile

Montreal, Canada • September 19-20, 2022 • Hosted by Dalimar Instruments

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Dr. Peter Avitabile, Professor Emeritus of Mechanical Engineering at the University of Massachusetts, Lowell

Modal analysis is an essential technology behind solving today's noise and vibration problems. Dr. Peter Avitabile, Professor Emeritus at University of Massachusetts Lowell, will discuss taking measurements – along with the pitfalls, difficulties, and common misconceptions related to modal testing. This seminar will focus on the practical aspects of impact and shaker measurements, the most common methods used to acquire data for experimental modal analysis.

SEMINAR AGENDA

Day 1:

8:15 - 9:50	Overview of Experimental Modal Analysis and Measurements Required
10:00 -10:30	Impact Basics - Hammer, Tips, Force, Accelerometers
10:30 -11:00	Shaker Basics - Shaker, Amplifier, Force, Impedance
11:00 -11:50	Perform a basic experimental modal test - overview the process: make measurements
1:00 - 2:00	Modal Primer - A Brief Overview of the Process
2:00 - 2:50	Hammer - Tips; Force/Exponential Window; Coherence - example measurements
3:00 - 3:50	Hammer - Double Impact; Over/Underload/Saturation - example measurements
4:00 - 5:00	Hammer - Multiple Impacts; Roving/Stationary Hammer - example measurements

Day 2:

8:15 - 9:50	Shaker Excitation Signals for modal testing - example measurements (random, burst random, pseudo -random, chirp, digital stepped sine)
10:00 -11:00	MIMO-FRF, Multiple Coherence - example measurements (or previous data) (Shaker independence/PCA, shaker anomalies, number of shakers)
11:00 -12:00	Measurement Inconsistencies from Poor Testing - Implications for Modal Test
1:00 - 2:00	Impact Testing - Additional Items for consideration Frequency Range - Multi-bands; Skewed Inputs, ICP Low Frequency;
2:00 - 3:00	Shaker Testing - Additional Items for Consideration Stinger types, stinger effects, impedance heads, general shaker set up SLSO/MIIVIO, mass loading, effect on modal analysis (stability, modes extracted)
3:00 - 4:30	Closing Remarks - Q&A

Location:
Chateau Vaudreuil
21700 Route Transcanadienne
Vaudreuil-Dorion, QC
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The cost of the training session is **$736 CAD.** This fee covers the course, training materials, a hands-on lab section, and meals.

Please contact Daniel Larose to submit payment: dlarose@dalimar.ca