



浙江大学 建筑工程学院

COLLEGE OF CIVIL ENGINEERING AND ARCHITECTURE  
ZHEJIANG UNIVERSITY

# New Trends in Structural Health Monitoring



**OBJECTIVE:** Important buildings and bridges are often endowed with monitoring systems to measure and analyze short-term vibrations due to exceptional events and long-term vibrations induced by vehicles. When analyzing the data collected from sensor networks, Artificial Intelligence (AI) methods are becoming increasingly popular. The most effective methods can be identified as Pattern Recognition (PR), Machine Learning (ML), and Deep Learning (DL). Considering the emerging use of wireless sensor networks (e.g., self-powered sensor networks), ML- and PR-based models are rapidly becoming reliable methods to evaluate the structural response of buildings and bridges, for both early damage detection and model updating.

**ORGANIZERS:** Prof. Giorgio Monti, Prof. Hongmei Zhang, and Prof. Cristoforo Demartino

**COLLABORATORS:** Xuguang Wang, Chenyu Zhou, and Qingcong Zeng

## LECTURES:

Date	Time (CST)	Lecturer	Topic
11.16	20:00-21:30	All the lecturers	Introduction and Goals
		Bill Spencer (UIUC, USA)	New Trends in Structural Health Monitoring
11.18		Binbin Li (ZJUI, China)	Bayesian Method for Operational Modal Analysis
11.22		Giuseppe Quaranta (Sapienza University of Rome, Italy)	Computational Intelligence for Dynamic Identification
11.25	15:30-17:00	Cristoforo Demartino (ZJUI, China)	Bridges under Extreme and Variable Actions: Modeling, Monitoring, and Digital Twins
11.29	18:30-20:00	Vikram Pakrashi (University College Dublin, Ireland)	Energy Harvesters as Structural Health Monitors
12.02		Yasutaka Narazaki (ZJUI, China)	Computer Vision-based Civil Infrastructure Inspection and Monitoring
12.07		Giuseppe Marano (Polytechnic of Turin, Italy)	Gaussian Regression in Structural Monitoring

**ORGANIZATION:** The course will be offered in English. The attendance is free and open.

4 class hours per lecture (each class hour = 45 minutes), with a total of 28 class hours.

Except for the first lecture, all lectures will be:

- from 15:30 to 17:00, and from 18:30 to 20:00, CST (China)
- from 08:30 to 10:00, and from 11:30 to 13:00, ECT (Italy)
- from 07:30 to 09:00, and from 10:30 to 12:00, GMT (Ireland)

**TARGET AUDIENCE:** Master students, PhD candidates and post-doctoral fellows, researchers and practitioners.

**REGISTRATION:** To register scan the QR code or click the link below

[https://us02web.zoom.us/webinar/register/WN\\_q7slO-aRPOo9EMtv8onzw](https://us02web.zoom.us/webinar/register/WN_q7slO-aRPOo9EMtv8onzw)

**INFORMATON:** Send an email to [zju\\_shm\\_course\\_2021@outlook.com](mailto:zju_shm_course_2021@outlook.com)

