

Seminar on Model Order Reduction and Sensor Features in Active Structural Control

19 October 2018, 3:30-5:00pm, Z210, PolyU
The Hong Kong Polytechnic University

Biography of the Speaker



Prof. Casciati Fabio

Professor

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Prof. Casciati (born in Naples, January 16, 1949) had the degree in Civil Eng. cum laude on June 15, 1972, from the University of Pavia, where he is Full Professor of “Scienza delle Costruzioni” since 1980.

He served as Institute and Department Chairman (1980-1983). He was member of the Faculty of the Ph.D Course on Structural Engineering ruled by the Polytechnic of Milan and the Univ. of Pavia in the period 1984-1994. Chairperson of the Civil Eng. Council in 1986-89, Responsible of the Infrastructure Engineering undergraduate school from 1993 to 2001, Coordinator of the Ph.D Course in Civil Eng. of the University of Pavia from 1994 to 2016.

He served as President of the European Association for the Control of Structures from 1993 to 2008, and as President of the International Association, IASC, from 2000 to 2004.

F. Casciati is editor of Smart Structures and Systems, and member of the Editorial Board of Structural Safety, J. of Structural Control & Health Monitoring, Computers & Structures, J. of Earthquake Engineering and Engineering Vibration.

Introduction

Two actions are preliminary to the design of a control law: to introduce a numerical model of the system to be controlled, together with its reduced-order approximation, and to fix the number and positions of the actuators, together with those of the sensors providing the feedback.

The link between measured acceleration quantities and model variables can be demanded to the Kalman filter in seismic applications. When moving to wind excitation, the standard approach is no longer viable, and one meets several options. Two timber footbridges are studied to provide numerical examples.

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