

Kolloquium

Am Montag, dem 18. Februar 2013, um 12:00 Uhr hält

Professor Ruxu Du
Dept. of Mechanical and Automation Engineering
Chinese University of Hong Kong
einen Vortrag mit dem Titel

The Science and Art of Condition Monitoring and Fault Diagnosis in Manufacturing

Der Vortrag findet im Raum A1-3-330 statt.

Abstract:

With an ever-increasing demand for improving quality and reducing cost, condition monitoring and fault diagnosis has become a must in many manufacturing engineering applications such as high speed machining, precision stamping, and etc. Nevertheless, it is a challenging task, as in these applications the processes and/or systems are nonlinear, stochastic and very complex. This talk presents a systematical view of the methods of condition monitoring and fault diagnosis. It consists of five parts. First a unified model for condition monitoring and fault diagnosis is given. Second, a brief review of sensors and sensing technology is provided. The third and the fourth parts are the main body of the presentation, which present sensor signal characterization (signal processing) and signal understanding (decision making). In particular, four new methods developed by the speaker are presented, including:

(a) 4D holospectrum (b) Snake skeleton graph (c) Transition fuzzy probability and (d) Support vector machine

Finally, concluding remarks and future research topics are discussed.

Short biography:

Dr. R. Du was born in China in 1955. He received his Master's degree from the South China University of Technology in 1983 and his Ph.D. degree from the University of Michigan in 1989. He has taught in the University of Windsor, in Windsor, Ontario and University of Miami, in Coral Gables, Florida. Currently, he is a professor in the Dept. of Mechanical and Automation Engineering at the Chinese University of Hong Kong (CUHK). He is also the director the Institute of Precision Engineering of CUHK and the director of the Chinese Academy of Science (CAS) Guangzhou Institute of Advanced Technology. He is a Fellow of SME and a Fellow of ASME. His areas of research include: design and manufacturing (metal forming, machining, plastic injection molding and etc.), as well as energy and materials. He has published over 300 papers in various academic journals and international conferences. He is the associate editor / the members of editorial board of six international journals.



Eingeladen von: Prof. Dr.-Ing.habil. Sergej Fatikow

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