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Automatic
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The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

**Real time fault detection of dynamic systems – from signal processing based methods
to data driven methods**

Professor Hao Ye

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Tsinghua University, Beijing, China

Tuesday, 12 September 2017 at 14:00
LT02, Sir Henry Stephenson Building

Abstract

This talk reviews selected work on fault detection of my group over the past 20 years, which covers signal processing based, model based, data driven in addition to machine learning based methods, and their applications to long distance pipelines, blast furnaces and high speed railway systems. My presentation starts from our paper on fault detection based on Wavelet Transform, awarded the best paper of CPCC in 1994, followed by an extension to model based methods. After a brief introduction of some other model based methods, the talk discusses some of our recent work on data driven and machine learning methods. Apart from presenting the main results of each kind of methods, my talk also tries to explain the transit from signal processing based methods to model based methods, and finally to data driven and machine learning based methods.

Biography

Professor Hao Ye received his B.S. degree in Automation and PhD degree in Control Theory and Its Application from Tsinghua University in 1992 and 1996 respectively. He is currently a full Professor, Director of the Institute of Process Control Engineering in Department of Automation, and Director of Rail Transit Control Technology R&D Center in Research Institute of Information Technology of Tsinghua University. He is also the general secretary of Fault Diagnosis Committee, and member of the Process Control Committee of the Chinese Association of Automation. His research interests include fault diagnosis and modelling of dynamic systems. He received the 2nd Prize of the National Natural Science Award of China in 2012.