The Seminar Series

Prof. Dr. Peter Sagirow (1915 – 1997)

has been with the University of Stuttgart from 1958 until 1980.

Having held a Professorship in Theoretical Mechanics he had the farsightedness to establish the field of systems and control theory at the University of Stuttgart at a very early stage. Among many other lasting contributions he was significantly involved in the creation of the very successful study program of Engineering Cybernetics that celebrated its 30th anniversary in 2001.

With this annual seminar series the Institute for Systems Theory in Engineering intends to honor Peter Sagirow and the decisive role he played in the development of the field of control at the University of Stuttgart.

Each year a highly distinguished researcher is brought to campus to report on the state of the art, achievements and challenges in the field of systems and control to a wider audience.

University of Stuttgart

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Peter Sagirow Distinguished Seminar Series

of the University of Stuttgart

Institute for Systems Theory in Engineering

University of Stuttgart

Karl Johan Åström

Title:

Black Boxes and White Noise - The Evolution of the Field of Control

Date: Tuesday, June 21, 2005

Time: 4 p.m.

Place: Room V 7.01
Pfaffenwaldring 7, Campus Vaihingen

About the speaker

Prof. Dr. Karl Johan Åström

was educated at The Royal Institute of Technology in Stockholm where he got an MS in 1957 and a PhD in 1960. After graduating he worked for five years for IBM Research on stochastic control theory and computer control of paper machines. In 1965 he was appointed Professor to the Chair of Automatic Control at Lund Institute of Technology. From 2000 he has been Emeritus of Lund University and Visiting Professor at UCSB.

Karl Åström has been one of the most influential researchers and educators worldwide in the field of control over the past 40 years, with many contributions to stochastic control, adaptive control, system identification, computer control and many other fields. He wrote six books and more than 100 papers in archival journals. Åström is a member of several academies among them the Royal Swedish Academy of Engineering Sciences, the Royal Swedish Academy of Sciences, and the US National Academy of Engineering.

Åström has received many honors, among them five honorary doctorates, the Quazza Medal from the International Federation of Automatic Control (IFAC), the IEEE Control Systems Award and the IEEE Medal of Honor, which is the highest award of IEEE.

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Peter Sagirow Distinguished Seminar Series

Abstract

Black Boxes and White Noise - The Evolution of the Field of Control

The field of automatic control is about 60 years old. It has developed very rapidly and control is now ubiquitous. This talk presents some reflections on the dynamic development of the field.

It starts with a brief history and a discussion of engineering science and natural science. Automatic control being the first systems field was a paradigm shift because it fitted poorly in organizations based on mechanical, electrical and chemical engineering. Key ideas in the development of control are presented. The interplay of theory and applications are discussed as are relations to specific engineering disciplines, mathematics, physics, computer science and biology.

An attempt is made to assess the current status of the field, and the lecture ends with some speculations about future developments. Questions dealing with research, education and applications will be covered. An explanation of the title of the talk will also be provided.

University of Stuttgart, June 21, 2005