

Thursday
July 17, 2014
2 p.m.

Lecture Room:
V 9.01

Universität Stuttgart
Campus Vaihingen
Pfaffenwaldring 9

Peter Sagirow
Distinguished Seminar Series

About the Peter Sagirow Distinguished Seminar Series

With this annual seminar series, the Institute for Systems Theory and Automatic Control intends to honor the late Peter Sagirow and the decisive role he played in the development of the field of engineering cybernetics 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.

Modeling, Control and Optimization of Hybrid-Electric Vehicles



Prof. Dr. Lino Guzzella

**Professor of Thermotronics
Rector of the ETH Zurich
Zurich
Switzerland**

Abstract

Automobiles offer many great benefits, but cause several problems, notably the emission of carbon dioxide and the consumption of primary energy resources. Particularly hybrid-electric power trains offer interesting opportunities for improving the fuel economy of automobiles. First, simple yet useful scalable models of hybrid-electric vehicles (HEV) are introduced in this talk. These models are a prerequisite for a model-based optimization of the topology, the parameters, and the energy management of HEV. Then, useful tools and methodologies are shown that permit fast optimizations of HEVs over large search spaces. Finally, some examples of HEV on which our group has worked over the past ten years are presented.

About the Speaker

Lino Guzzella was born in Zurich, Switzerland in 1957. From 1987 to 1989, he was with the R&D department of Sulzer Bros. in Winterthur, Switzerland. From 1989 to 1991, he was an assistant professor for automatic control in the electrical engineering department of ETH. He then joined Hilti R&D, Liechtenstein where he was the head of the mechatronics department from 1992 to 1993. Until December 2014, he will continue to be professor for thermotronics in the mechanical engineering department of ETH. Professor Guzzella contributed significantly to the fields of modeling of dynamic systems, nonlinear and robust control as well as applications of these ideas to thermal and especially automotive systems. He is known worldwide for his leading role in his research fields. Lino Guzzella received numerous awards for his research contributions including the Energy Globe Award, the Watt d'Or Award and the KPMG Inspiration Grant. Since 2012, Lino Guzzella is the Rector of ETH Zurich. Starting in January 2015, Professor Guzzella will be the President of ETH Zurich.

Further information:

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