

学术报告会

时间: 2017年12月21日(周四) 10:00-11:30

地点: 电院群楼2-406会议室

Sliding Mode Controllers: stages of evolution

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Abstract:

The history and evolution of sliding control will be discussed. The main problems arising in the usage of the first order sliding modes will be explained. The second order sliding mode control algorithms and their specific features will be presented. The chattering reduction in the continuous second order super-twisting controllers will be illustrated. The precision of the arbitrary order sliding mode controllers will be shown. The continuous arbitrary order sliding mode controllers will be presented and discussed. Videos with the experimental illustration of the properties of the main sliding mode algorithms will be presented.

Biography:

Leonid M. Fridman received a Ph.D. degree in applied mathematics from the Institute of Control Science, Moscow, Russia, in 1988, and a Dr. Sc. degree in control science from Moscow State University of Mathematics and Electronics, Moscow, Russia, in 1998. From 1976 to 1999, he was with the Department of Mathematics, Samara State Architecture and Civil Engineering University. In 2002, he joined the Department of Control Engineering and Robotics, Division of Electrical Engineering of Engineering Faculty at National Autonomous University of Mexico (UNAM), Mexico. He was working as an invited professor in 20 universities and research laboratories of Argentina, Australia, Austria, France, China, Germany, Israel, Italy and Spain.

His research interests are Variable Structure Systems. He is currently a Chair of TC on Variable Structure Systems and Sliding mode control of IEEE Control Systems Society. He is an author and editor of ten books and fifteen special issues devoted to the sliding mode control. He is a winner of Scopus prize for the best cited Mexican Scientists in Mathematics and Engineering 2010.