SZTAKI

RUDOLF E. KÁLMÁN
DISTINGUISHED LECTURER PROGRAM

Prof. Gábor Stépán

Professor in Applied Mechanics
Dept. of Applied Mechanics
Budapest University of Technology and Economics

PARAMETER SENSITIVITY IN TIME-DELAY SYSTEMS

Az előadás ideje és helye:
2019. november 18. hétfő, délután 16:00 óra
SZTAKI, Bp XI. Kende utca 13-17, Nagytanácsterem.
Az előadás magyar nyelvű, nyilvános, minden érdeklődőt szeretettel várunk.
Részvételi szándékát kérjük a www.sztaki.hu/Kalman címen jelezni.

Abstract: It is a rule of thumb that increasing time-delay has destabilizing effects in dynamical systems: it tends to make equilibria unstable, bifurcations subcritical, and chaos often appears in the jungle of the emerging unstable limit cycles. The lecture will discuss cases when the stability properties show extreme sensitivity to system parameters, especially to the time delays. These cases may seem to be mathematical curiosities, but they originate in relevant physical examples like the acceleration feedback in the wheeled inverted pendulum, the squealing sound in public address systems, or the hardware-in-the-loop tests of high-speed cutting.

Short bio: Gábor Stépán is Professor in Applied Mechanics at Budapest University of Technology and Economics (BME). He served on the editorial boards of Nonlinear Dynamics, Mechanism and Machine Theory, Physica D, and the Philosophical Transactions of the Royal Society. He is member of the Hungarian Academy of Sciences and the Academy of Europe. He is an ERC Advanced Grant and Proof of Concept Grant holder, and the recipient of the Thomas K. Caughey Dynamics Award of ASME. He also served as the dean of the Faculty of Mechanical Engineering at BME. He is an elected member of the Executive Committee of the Congress Committee of IUTAM, and the EuroMech Council. His research interests include nonlinear vibrations and time-delay systems with specific applications in mechanical engineering, like rehabilitation robotics, machine tool vibrations, wheel shimmy, and hardware-in-the-loop experiments.

Az előadás szervezésében közreműködik a
Bolyai János Matematikai Társulat és a **Neumann János Számítógép-tudományi Társaság**.

A rendezvény támogatói:

CENTRE OF EXCELLENCE **EPIC**
Production Informatics and Control

SZTAKI