Sociedade Brasileira de AUTOMÁTICA

I Webinar 2022

26 de maio de 2022 às 10h00.

Stability and Stabilization of Continuous-time Switched Affine Systems

Canal do Youtube da SBA

Abstract: Switched affine systems are a subset of hybrid systems having remarkable characteristics. Their dynamic equations present a discontinuous affine dependence on the state and no other input than the switching signal, which makes them suitable for either locally approximating complex nonlinear switched systems or modeling several devices in power electronics, e.g., DC-DC converters and Voltage Source Inverters. Generally, the origin is not a common equilibrium point and other types of attractors, such as forward invariant sets and limit cycles, become paramount for the stability analysis, in special under a limited-frequency switching. This webinar covers novel and classic aspects of stability and stabilizability analysis of this class of systems and presents motivations for employing switched systems theory for controlling real-world switching devices.

Biografia do palestrante:

Lucas N. Egidio was born in Ipatinga, Brazil. He received the B.Sc. degree in Control and Automation Engineering in 2015, the M.Sc. degree in Mechanical Engineering in 2016, and the Ph.D. degree in Mechanical Engineering in 2020 from the University of Campinas (UNICAMP), Brazil. In 2018, he spent 6 months at the University of California, Santa Barbara, as a Visiting Scholar. During 2020 he was a Postdoctoral Fellow at Linköping University, Sweden. Currently, he is with Université Catholique de Louvain, where he works as a postdoctoral researcher. His research interests include switched systems, convex optimization, machine learning, and control applications in power electronics.

Apoio: *CT de Controle*