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Vortragsankündigung

Seminar Regelungssysteme LV 0430 L 654

Freitag, 22. Juni 2012, 15:00 Uhr
Vortragsort: EN 223

Dr. Vadim Azhmyakov
Departamento de Control Automatico, CINVESTAV, Mexico

“On the Zeno Behavior in Affine Switched Systems”

This talk deals with a new theoretic description of a specific interaction of continuous and discrete dynamics in switched control systems known as a Zeno dynamics. We consider solutions to the closed loop realizations of control systems with affine structure that admit infinitely many discrete transitions on a finite time interval. Although the real-world processes do not present the corresponding behavior, mathematical models of some interconnected engineering systems may be Zeno due to the formal abstraction. In this paper we give a variational interpretation of the Zeno-like dynamics. A generic trajectory associated with this dynamics is finally specified as a result of a particular optimization procedure applied to the original model. The variational description of the Zeno effect provides an analytic basis for the constructive approximations techniques. We also study an intersection of a class of switched systems and the conventional sliding mode control processes.