



UNIVERSITÄT
DES
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Einladung zum Gastvortrag

Am Donnerstag, 28. Januar 2010, 16.00 Uhr, spricht
in Gebäude A5 1, Hörsaal -1.03

Herr Prof. Dr. Mamadou Mboup
Université de Reims Champagne Ardenne
CReSTIC – UFR des Sciences Exactes et Naturelles
& INRIA EPI ALIEN

zum Thema

An algebraic framework for identification and parameter estimation

The association of differential algebra and operational calculus leads to simple and efficient online system identification and signal parameter estimation. This algebraic framework is presented here via two case studies.

1 - Flexible manipulators: One of the most challenging problems related to flexible structures is to obtain on-line estimations of their natural frequencies. This information can be used to update adaptive (feedback or feedforward) controls for structures with parameter uncertainties among others. In addition, the on-line frequency estimations are also useful to detect changes of frequency which are associated to failures in the structure. This application is also known as health monitoring.

2 - Neural spike detection: When the equilibrium of electrical charges across the axonal membrane of a neuron is broken, either in response to an extracellular stimulus or even spontaneously, an electrical discharge called action potential (AP) is emitted. One of the most important and challenging problems in neuroscience is the decoding of the neural information conveyed by the spike trains. Reliable detection of the AP and accurate estimation of the spiking instants constitute the first mandatory step towards such neural information processing.

Alle Interessenten sind herzlich eingeladen.

Univ.-Prof. Dr.-Ing. habil. J. Rudolph



Lehrstuhl für Systemtheorie
und Regelungstechnik
Prof. Dr.-Ing. habil. J. Rudolph

Universität
Campus A5 1
D-66123 Saarbrücken

Tel.: +49 (0) 681 302-64721
Fax: +49 (0) 681 302-64722

www.lsr.uni-saarland.de