

Robust Identification of Transient Port Responses Using Time Domain Orthonormal Vector Fitting

D. Deschrijver, B. Haegeman, T. Dhaene

Contact: Dirk Deschrijver - *Belgium*

14:10-14:30

A robust technique is presented for parametric identification of linear time-invariant systems in the time domain. Based on a Sanathanan-Koerner iteration, the transfer function coefficients are calculated iteratively by minimizing a weighted linear cost function. The time-domain equivalent of the Muntz-Laguerre basis is used to improve the numerical conditioning of the associated system equations. It is shown that the method is computationally efficient, and able to fit highly dynamic responses. Copyright ©2007 IFAC.

A Method for Bias Reduction in Time Domain Least Squares Parameter Estimation

James S. Welsh; Graham C. Goodwin; Hugues Garnier

Contact: James S. Welsh - *Australia*

14:30-14:50

This paper examines the issue of bias that arises when applying least squares identification to continuous-time models of resonant systems. We propose a simple method to reduce the impact of this bias by pre-processing the data. This new method requires no knowledge of the noise colouring. An example is presented that shows the superior performance of the proposed method over that of a traditional method. Copyright ©2007 IFAC.

On the Subspace-Based Interpolation of Rational Matrix Functions

Hüseyin Akcay; Semiha Türkay

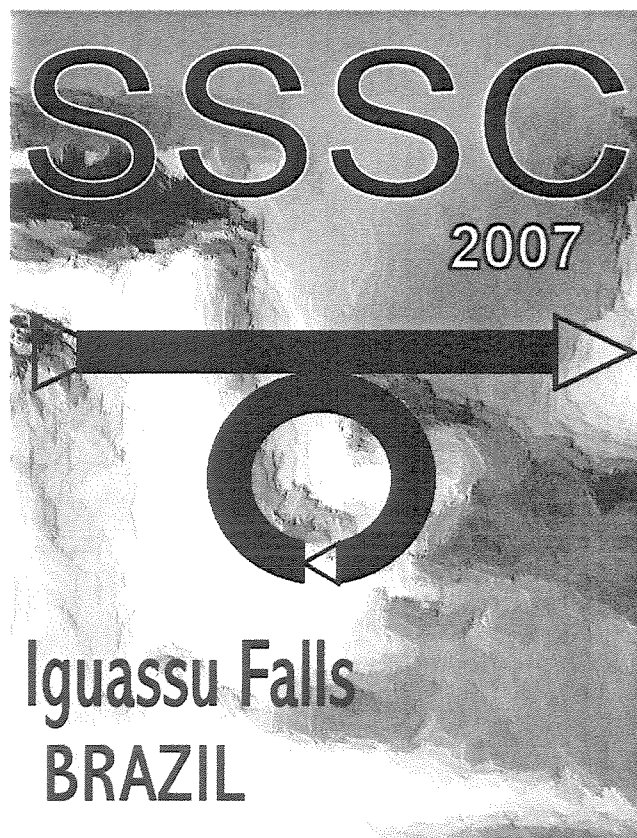
Contact: Hüseyin Akcay - *Turkey*

14:50-15:10

In this paper, we study interpolation of rational matrix functions which are analytic at infinity and discuss the properties of a recently proposed interpolation algorithm related to the frequency-domain subspace-based identification methods. The efficiency of the algorithm is illustrated with a step-by-step numerical example. Copyright ©2007 IFAC.

3rd IFAC SYMPOSIUM
on
SYSTEM, STRUCTURE and CONTROL

Final Program
Book of Abstracts



October 17th - 19th, 2007
Foz do Iguassu, Brazil

