

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE  
UNIVERSITY OF SOUTHERN DENMARK, ODENSE

## Mathematics seminar

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# Numerical Solution of Stochastic Differential-Algebraic Equations

Thursday 19 January 2017, 14:15-15:15  
IMADA seminar room

### Abstract

The transient modelling of electronic circuits with noise leads to stochastic differential-algebraic equations (SDAEs). In this talk, we will discuss how thermal noise, that is noise generated by the thermal agitation of the charge carriers (usually the electrons) inside an electrical conductor, can be modelled as additive colored noise, leading to well defined SDAEs. We will then discuss some challenges concerning the numerical solutions of the model, and finally suggest a numerical algorithm which to some extent meets those challenges.

Host: David Kyed