Gruppo Nazionale per la Fisica Matematica

CENTRO INTERDIPARTIMENTALE DI MATEMATICA PER LA TECNOLOGIA "A. M. ANILE"

UNIVERSITÀ degli STUDI di CATANIA

DIPARTIMENTO DI MATEMATICA E INFORMATICA

associazione angelo marcello anile

SCEE 2018

THE 12TH INTERNATIONAL CONFERENCE ON SCIENTIFIC COMPUTING IN ELECTRICAL ENGINEERING

September 23-27, 2018 – Taormina, Sicily, Italy

Programme

Sunday, September 23

18:30 – 19:30 Registration

19:30 – 20:30 Welcome cocktail

Monday, September 24 – Morning

8:30 – 9:00 ***Registration***

9:00 – 9:20 ***Opening***

Session 1

9:20 – 10:10 IT: **Matthias Auf der Maur**
Current developments in device simulation: degeneracy, arbitrary density of states and multi-particle drift-diffusion

10:10 – 10:35 CT: René Pinnau
Semiconductor Optimization, Model Hierarchies & Asymptotic Analysis

10:35 – 11:00 CT: Marco Coco and Vittorio Romano
Charge and phonon transport in suspended monolayer graphene

11:00 – 11:20 ***Coffee break***

Session 2

11:20 – 12:10 IT: **Tudor Ionescu**
Model reduction for nonlinear systems – a time-domain moment matching perspective

12:10 – 12:35 CT: Jan Kühn, Andreas Bartel and Piotr Putek
A Thermal Extension of Tellinen's Scalar Hysteresis Model

12:35 – 13:00 CT: Armin Fohler and Walter Zulehner
Adaptive Mesh Refinement for Rotating Electrical Machines Taking into Account Boundary Approximation Errors

13:00 – 15:00 ***Lunch***

Monday, September 24 – Afternoon

Session 3

15:00 – 15:50 IT: **Sara Grundel**
Simulation and Model Order Reduction of Power Systems

15:50 – 16:15 CT: Onkar Jadhav, Evgenii Rudnyi and Tamara Bechtold
Load Snapshot Based Nonlinear-Input Model Order Reduction of a Thermal Human Tissue Model

16:15 – 16:40 CT: Roland Pulch
Frequency-domain integrals for stability preservation in model order reduction

16:40 – 17:05 CT: Ruxandra Barbulescu, Daniel Ioan, Gabriela Ciuprina, Aurel Sorin Lup and Mihai Popescu
Reduced Order Models for the Simulation of the Saltatory Conduction

17:05 – 17:25 Coffee break

17:25 – 17:50 CT: Orazio Muscato
Direct Simulation Monte Carlo of the Wigner transport equation

17:50 – 18:15 CT: Piotr Putek, E. Jan W. ter Maten and Michael Günther
Shape optimization of a permanent magnet synchronous machine under probabilistic constraints

18:15 – 18:40 CT: G. Aiello, S. Alfonzetti, S.A. Rizzo, N. Salerno
Shape optimization of an induction heating device

Tuesday, September 25

Session 5

9:00 – 9:50 IT: **Omar Morandi**

Description of the trajectories of quantum particles by a Quantum Lagrangian approach

9:50 – 10:15 CT: Karthik V. Aadithya, Eric R. Keiter and Ting Mei

Predictor/Corrector Newton-Raphson (PCNR): A Simple, Flexible, Scalable, Modular, and Consistent Replacement for Limiting in Circuit Simulation

10:15 – 10:40 CT: Kai Bittner, Hans G. Brachtendorf and Wim Schoenmaker

LinzFrame – A Modular Mixed-Level Simulator with Emphasis on Radio Frequency Circuits

10:40 – 11:00 Coffee break

Session 6

11:00 – 11:25 CT: Giovanni Nastasi and Vittorio Romano

Simulation of double gate graphene field effect tansistors

11:25 – 11:50 CT: Giovanni Mascali and Vittorio Romano

A hydrodynamic model for 2D-3D electron transport in silicon devices

11:50 – 12:15 CT: Jeroen Tant and Johan Driesen

Analysis and Numerical Solution of Piecewise Smooth Differential Algebraic Equations for Power Electronic Circuit Simulation

12:15 – 12:40 CT: Pasquale Claudio Africa, Carlo de Falco and Dario Natali

Scalable Adaptive Numerical Simulation for Organic Thin Film Transistors

13:00 – 15:00 Lunch

15:00 – 17:00 Social tour

20:00 Social dinner

Wednesday, September 26 – Morning

Session 7

9:15 – 9:45 IS: **Mario Saggio**

Title tba

9:45 – 10:15 IS: **Tonio Biondi**

Data Center Power

10:15 – 10:40 CT: Andreas Blaszczyk, Thomas Christen, Hans K. Meyer and Michael Schüller

Surface Charging Formulations for Engineering Applications. Validation by Experiments and Transient Models

10:40 – 11:00 Coffee break

Session 8

11:00 – 11:50 IT: **P. Gangl**

Topology and Shape Optimization of Electrical Machines

11:50 – 12:15 CT: Julius Zimmermann and Ursula van Rienen

Electromagnetic stimulation chambers for cartilage regeneration

12:15 – 12:40 CT: Konstantin Butenko, Andrea Böhme and Ursula van Rienen

Open Source Simulation Platform for Deep Brain Stimulation

12:40 – 14:40 Lunch

Wednesday, September 26 – Afternoon

Session 9

14:40 – 15:30 IT: **Jay Gopalakrishnan**

Techniques for modeling fiber laser amplifiers

15:30 – 15:55 CT: Nicolas Marsic and Herbert De Gersem

Optimized Schwarz methods for Helmholtz problems in a closed domain

15:55 – 16:20 CT: Peter Gangl, Ulrich Langer, Angelos Mantzaflaris and Rainer Schneckenleitner

Isogeometric Simulation and Shape Optimization with Applications to Electrical Machines

16:20 – 16:40 Coffee break

16:40 – 17:20 Poster shot gun presentation

17:20 – 19:00 Poster session

Thursday, September 27

Session 10

9:00 – 9:50 IT: **Bilen Emek Abali**

Modeling mechanochemistry in Li-ion batteries

9:50 – 10:15 CT: Ioannis Deretzis and Antonino La Magna

Multiscale atomistic modeling for materials science applications

10:15 – 10:40 CT: A. Bermúdez, D. Gómez and D. González-Peñas

Thermo-electrical analysis of indirect resistance heating furnaces combining numerical simulation and lumped models

10:40 – 11:00 Coffee break

Session 11

11:00 – 11:50 IT: **Steffen Börm**

GCA-H^2 matrix compression for electrostatic simulations

11:50 – 12:15 CT: Siyang Hu, Chengdong Yuan and Tamara Bechtold

Quasi-Schur Transformation for the Stable Compact Modeling of Piezoelectric Energy Harvester Devices

12:15 – 12:40 CT: A.K. Tyagi, X. Jonsson, T.G.J. Beelen and W.H.A. Schilders

An Unbiased Hybrid Importance Sampling Monte Carlo Approach for Yield estimation in Electronic Circuit Design

12:40 – 13:05 CT: Herbert Egger, Bogdan Radu

A mass-lumped mixed finite element method for Maxwell's equations

13:05 Closing