Welcome to WCM-MSM2002

Workshop on Compact Modeling

The 5th International Conference on Modeling and Simulation of Microsystems

San Juan, Puerto Rico, USA
April 23 – 25, 2002
Acknowledgments and Credits

• All the invited speakers — your active participation, time and efforts in preparation of your presentation, taking your time, and making the long trip

• MSM organizers
  Matthew Laudon, Bart Romanowicz, Sarah Wenning

• Participation of contributed papers and audience

• Organizer: initiation and coordination
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<th>Invited Speakers</th>
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<tr>
<td>Narain Arora, Simplex Solutions, USA</td>
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<td>Peter Bendix, LSI Logic, USA</td>
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<td>Britt Brooks, Texas Instruments, USA</td>
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<td>Matthias Bucher, National Technical University of Athens, Greece</td>
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<td>Mansun Chan, Hong Kong University of Science and Technology, Hong Kong</td>
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<td>Jamal Deen, McMaster University, Canada</td>
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<td>Michael Duane, Applied Materials, USA</td>
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<td>Christian Enz, Swiss Center for Electronics and Microtechnology, Switzerland</td>
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<td>Jerry Fossum, University of Florida, USA</td>
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<td>Daniel Foty, Gilgamesh Associates, USA</td>
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<td>Samuel Fung, IBM, USA</td>
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<td>Gennady Gildenblat, Pennsylvania State University, USA</td>
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<td>Dirk Klaassen, Philips Research Laboratories, The Netherlands</td>
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<td>Kwyro Lee, KAIST, Korea</td>
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<td>Serge Luryi, SUNY at Stony Brook, USA</td>
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<td>Marco Mastrapasqua, Agere Systems, USA</td>
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<td>Colin McAndrew, Motorola, USA</td>
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<td>Mitiko Miura-Mattausch, Hiroshima University, Japan</td>
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<td>Andrea Pacelli, SUNY at Stony Brook, USA</td>
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<td>Roberto Suaya, Mentor Graphics, France</td>
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<td>Josef Watts, IBM, USA</td>
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<td>Xisheng Zhang, Celestry Design Technologies, USA</td>
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<td>Xing Zhou, Nanyang Technological University, Singapore</td>
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Evening Panel Session

Moderator: Narain Arora, Simplex Solutions, USA

Panelists:
- Peter Bendix, LSI Logic, USA
- Britt Brooks, Texas Instruments, USA
- Mansun Chan, Hong Kong University of Science and Technology, Hong Kong
- Christian Enz, Swiss Center for Electronics and Microtechnology, Switzerland
- Daniel Foty, Gilgamesh Associates, USA
- Gennady Gildenblat, Pennsylvania State University, USA
- Dirk Klaassen, Philips Research Laboratories, The Netherlands
- Mitiko Miura-Mattausch, Hiroshima University, Japan

Agenda

A) 19:00 – 19:45: Panel presentation on Trends and Needs in Compact Models in the SOC Era

B) 19:45 – 20:30: Panel discussion on
1. Compact model standardization vs. diversity
2. Compact model quality: definitions and priorities
3. Compact model applications in circuit design and technology development
4. Compact model parameter extraction vs. optimization
5. Compact model predictability and scalability
6. RF/parasitic/interconnect models vs. intrinsic transistor compact models
7. Compact model accuracy and efficiency tradeoff
8. Physically based vs. largely empirical compact models

C) 20:30 – 21:00: Q/A session for the audience
Tutorial Sessions

• Model Equations of the Self-Consistent Surface-Potential MOS-Model HiSIM
  Mitiko Miura-Mattausch, Hiroshima University, Japan

• Submicron Circuit Design with BSIM3/4
  Mansun Chan, Hong Kong University of Science and Technology, Hong Kong

• MOS Transistor Modeling for RF IC Design
  Christian Enz, Swiss Center for Electronics and Microtechnology, Switzerland

• MOS Modeling, Design Quality, and Modern Analog Design
  Daniel Foty, Gilgamesh Associates, USA

• An Introduction to MOS Model 11
  Dirk Klaassen, Philips Research Laboratories, The Netherlands
WCM – Topics

- Bulk (intrinsic)
- CMOS
- SOI
- Extrinsic
- Bipolar
- Compound
- Interconnect
- RF/Noise

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WCM – Participation

- Academia
- Fab Foundries
- Compact Modelers
- Chip Manufacturers
- Designers
- Funding agencies
- Circuit-simulator vendors
- Parameter-extraction vendors

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How to get different walks of people to walk together on the same road?

- Model developers (*generators*)
- Circuit designers (*consumers*)
- Process engineers (*supporters*)
- Device physicists (*mentors*)
- Modeling group (*mediators*)
- TCAD group (*validators*)
- CAD vendors (*architects*)
- Consulting firms (*advisors*)
- Professors (*educators*)
- Students (*learners*)

- Hidden? - Center? - Nowhere?
Thank you for your participation!

Hope to see you all next year in San Francisco