IEEE/ACM INTERNATIONAL CONFERENCE ON COMPUTER-AIDED DESIGN

NOVEMBER 7-11, 2010

DOUBLETREE HOTEL SAN JOSE, SAN JOSE, CA

Sponsored by: sigda IEEE CEDA

In cooperation with: IEEE DATC

ICCAD serves EDA and design professionals, highlighting new challenges and innovative solutions for Integrated Circuit Design Technologies and Systems. ICCAD covers the full range of traditional CAD topics; in addition, it also covers CAD for supporting post-CMOS design, as well as design automation for novel application areas, such as biology and nanotechnology.

DEADLINE FOR ELECTRONIC SUBMISSION OF PAPERS:

Monday, April 19, 2010 * 5:00pm Pacific Daylight Time (GMT 07:00)

Original technical submissions on, but not limited to, the following topics are invited:

1) SYNTHESIS, VERIFICATION AND PHYSICAL DESIGN

1.1 Logic Synthesis:
Synthesis, technology mapping. Refinement techniques. Direct compilation and post-optimization. Micro-architectural transformations. Memory system synthesis.

1.2 Simulation and Formal Verification:
Formal verification techniques. HW/SW co-simulation. Switch, logic and behavioral simulation, and design validation. Protocol and interface design for correctness. Software verification. Emulation. Hybrid Systems.

1.3 Partitioning, Placement and Floorplanning:
High-level physical design and synthesis. Estimation and hierarchy management. Partitioning, floor-planning and global placement. Detailed and incremental placement.

1.4 Routing and Detailed Physical Design:
Detailed routing, including routing for yield, manufacturability, and timing. Post-placement layout optimization.

1.5 Optimization in Physical Design:
Optimization for area, timing, power, and yield. Interaction between physical design and logic synthesis.

2) CAD FOR SYSTEMS

2.1 System Design and Optimization:
HW/SW co-optimization and co-exploration. Multi-core/multi-processor systems (heterogeneous, homogeneous, reconfigurable). On-chip communication optimization. HW/SW platforms.

2.2 Embedded Systems:
Embedded and programmable systems. Real-time software and RTOS. Reuse techniques. Rapid prototyping, CAD for FPGA.

2.3 Power Considerations in System Design:
System-level power estimation, analysis and optimization.

2.4 Mixed Technology/Domain Systems:
System level analysis of thermal, reliability, aging, NBTI, electromigration, wearout, etc., effects in mixed technologies and physical domains (eg., MEMS, electro-optical). System issues in 3D integration.

2.5 Reliable and Alternative Systems:
Design techniques for achieving reliability, resilience and robustness from unreliable components. Regular circuits, structured ASICs. Novel trends and perspectives in system-level design, with emphasis on power, software, performance and configurability: SoC, SiP, 3-D integration, programmable and reconfigurable platforms.

3) CAD FOR MANUFACTURING AND TEST

3.1 Design for Manufacturability:
CAD for the design/manufacturing interface, CAD support for OPC and RET, variability analysis, yield estimation. Manufacturable layout.

3.2 Testing:
Fault modeling, delay test, analog and mixed signal test. Fault simulation. ATPG. BIST and DFT. Memory test and repair. Technology impact on test.

4) CAD FOR CIRCUITS, DEVICES AND INTERCONNECT

4.1 Analog, Mixed-Signal, RF and Multi-domain Simulation:
Numerical methods for analog, mixed-signal, RF, multi-domain (MEMS, nanoelectronic, optoelectronic, biological, etc.) network and system simulation. Nonlinear model reduction and computational macromodeling. Fast analysis of large-scale circuits and systems. Computer-aided analysis, design, and simulation of electronic and mixed-domain devices including semiconductor, nanoelectronic, micromechanical, and electro-optical devices. Compact device modeling and modeling of device variability.

4.2 Timing and Behavioral Modeling:
Gate, switch and block level modeling. Timing analysis and methodologies including statistical timing. Current-source modeling. Behavioral modeling of circuits and systems.

4.3 Interconnect and Power Networks:
Network-level power/ground and package analysis and optimization. Reduced order modeling of interconnect and linear time invariant networks. Signal integrity analysis. Interconnect parameter extraction. Electromagnetic simulation and package analysis. EMC/EMI simulation techniques.

5) CAD FOR NANOSCALE AND BIOLOGICAL SYSTEMS

5.1 Biological Systems:
Computer-aided analysis techniques for biological systems -biomolecular, intracellular, cellular, organ and organism level. Analysis and design of synthetic biological systems. Multi-scale biological systems, systems biology.

5.2 Nanoscale and Post-CMOS Systems: Analysis, synthesis and design methods for novel devices (eg., quantum, molecular, spin-based) and systems centered about future nanotechnologies. Bio-electronic devices and systems.

SUBMISSION DETAILS

Paper submissions must be done through the online submission system at http://www.easychair.org/conferences/?conf=iccad2010
Regular papers will be reviewed as finished papers; preliminary submissions will be at a disadvantage.

1). Regular paper submissions must (1) be in PDF format only, with saveable text. (2) be no more than 8 pages (including the abstract, figures, tables, and references), double-columned, 9pt or 10pt font, and (3) must not include name(s) or affiliation(s) of the author(s) anywhere on the manuscript, abstract, bibliographic citations, *or in the embedded PDF data.*

Submissions not adhering to these rules, or determined to be previously published (this includes pre-prints publicly available on personal or other websites, such as arXiv, or publicly available internal memoranda with author names divulged) or simultaneously submitted to another conference, or journal, will be summarily rejected. Internal memoranda with full content not publicly available, and with author names not divulged, may be submitted.

2). Templates will be available on the ICCAD website, www.iccad.com, for your convenience, but are not required.

3). Proceedings. **The deadline for final papers is Friday, August 13**. Accepted papers are allowed 4 pages in the conference proceedings free of charge. Each additional page beyond 4 pages is charged $125.00 per page. IEEE will hold the copyright for ICCAD 2010 proceedings. Authors of accepted papers must sign an IEEE copyright release form for their paper.

4). Conference registration. **At least one author per accepted paper must register by Monday, August 9 and pay a $425 registration fee.** Failure to register will result in your paper being removed from the conference proceedings. IEEE reserves the right to exclude a paper from distribution after the conference (e.g., removal from IEEE Xplore) if the paper is not presented at the conference.

ACM/IEEE WILLIAM J. MCCALLA ICCAD BEST PAPER AWARD

one or more outstanding submissions will be recognized with this prestigious award

NOTIFICATION OF ACCEPTANCE

Authors will be notified of acceptance on or before Friday, July 2, 2010.

Final paper guidelines will be sent at that time.

Keynote, Panel and Tutorial Proposals
Deadline: April 29, 2010

PANEL PROPOSALS

All panel proposals must be sent to **Alan Hu, Technical Program Vice-chair** at ajh@cs.ubc.ca. Panel suggestions should not exceed two pages, should describe the topic and intended audience, and should include a list of suggested participants. Panel suggestions must include a bulleted outline of covered topics.

KEYNOTE PROPOSALS

All keynote proposals must be sent to **Lou Scheffer, General Chair** at schefferl@janelia.hhmi.org. Keynote proposals must include descriptions of suggested keynote speakers, and the importance of the speech to the ICCAD audience.

SPECIAL SESSION PROPOSALS

All special session proposals must be sent to **Joel Phillips, Technical Program chair** at jrp@cadence.com. Special Sessions are 1.5 hours. Special session proposals should focus on in-depth treatment on a topic of timely interest to the ICCAD audience. Special session proposals should not exceed two pages, should describe the topic and intended audience, and must include a list of suggested participants with biographical data.

TUTORIAL PROPOSALS

All tutorial proposals must be sent to **Helmut Graeb, Tutorial Chair** at Graeb@tum.de. Proposals may be submitted for either full or embedded tutorials. Full-length tutorials consist of 1/2 day sessions, 3-3.5 hours, and embedded tutorials are 1.5 -2 hours, both running concurrently with the main technical program. Tutorial suggestions should not exceed two pages, should describe the topic and intended audience, and must include a list of suggested participants with biographical data. Proposals should focus on the state-of-the-art in a specific area of broad interest amongst ICCAD attendees.

ICCAD reserves the right to restructure all panel, special session, and tutorial proposals.

If you need assistance, please contact the appropriate committee members:

Lou Scheffer, General Chair: schefferl@janelia.hhmi.org

Joel Phillips, Technical Program Chair: jrp@cadence.com

Alan Hu, Technical Program Vice-Chair: ajh@cs.ubc.ca

Helmut Graeb, Tutoiral Chair: Graeb@tum.de

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