

March 26, 2008

**University of Texas – Austin
Thompson Conference Center**

8:00-8:45 Continental Breakfast and Registration in Lobby

**8:45-9:00 Welcome and Introductions from General Co-chair and Committee,
Wendy Bartlett (HP), Babak Falsafi (CMU)
Welcome from local sponsor and Steering Committee**

9:00-10:30 Microprocessors

Chair: Doug Berger, University of Texas

- SWAT: An Error Resilient System . Manlap Li, Pradeep Ramachandran, Swarup Sahoo, Sarita Adve, Vikram Adve and YuanYuan Zhou
- Reducing Overhead for Soft Error Coverage in High Availability Systems. Nidhi Aggarwal, Norman Jouppi, Parthasarthy Ranganathan, James E. Smith and Kewal Saluja
- Soft-Error Protection Mechanisms for In-Order Cores. Pedro Chaparro Monferrer, Xavier Vera, Javier Carretero Casado and Jaume Abella

10:30-11:00 Break

11:00-12:00 Microprocessors

Chair: Mike Bruce, AMD

- OpenSPARC: An Open Platform for Hardware Reliability Experimentation. Ishwar Parulkar, Alan Wood, James C. Hoe, Babak Falsafi, Sarita Adve, Josep Torrellas and Subhasish Mitra.
- Examining Workload Dependence of Soft Error Rates. Sonny Rao, Ted Hong, Pia Sanda, Jerry Ackaret, Adrian Barrera, Jorge Yanez, Subhasish Mitra, Jeffrey Kellington and Ryan McBeth.

12:00-12:45 Lunch

12:45-2:00 Dessert and Poster Presentations i

Chair: Jeff Kellington, IBM

- IC Component SEU Impact Analysis. Shijie Wen, Allan Silburt and Richard Wong
- A Design Methodology to Prevent Transient Faults in System on Chip Architectures. Muhammad Sheikh Sadi
- Comprehensive Tool For SEU Data Analysis. Milap Shah, Shijie Wen and Richard Wong
- A Very Low Overhead Method to Filter Single Event Transients in Combinational Logic. Aahlad Mallajosyula and Payman Zarkesh-Ha

- Alpha accelerated testing for Digital ICs, pitfalls and improvements. Damien Leroy, Remi Gaillard, Erwin Schaefer, Cyrille Beltrando, Shi-Jie Wen and Rick Wong
- Conjoined Processor: A Fault Tolerant High Performance Microprocessor. Viswanathan Subramanian, Naga Durgaprasad Avirneni and Arun Somani
- Reliability Improvements Enabled by Self-Imposed Temporal Redundancy. Elias Mizan
- Predictive Upset Threshold and Error Rate Estimations for Logic Elements in $\leq 90\text{nm}$ Technologies using Accurate Circuit-Substrate Simulation. Klas Lilja, Alexandre Azarenok, Prasanthi Relangi, and Subhasish Mitra

2:00-3:00 Panel - Do workloads matter?

Moderator: George Krejci, HP

Panelists

Ravi Iyer, University of Illinois

Ron Kalla, IBM

Shubu Mukherjee, Intel

3:00-3:30 Break

3:30-4:30 Failure Mechanisms

Chair: Terry Garyet, Freescale

- Delay Shifts Predict Gate-Oxide Early Life Failures. Tze Wee Chen, Young Moon Kim and Subhasish Mitra
- Modeling of NBTI-Induced PMOS Degradation under Arbitrary Dynamic Temperature Variation. Bin Zhang and Michael Orshansky

4:30-5:00 Living with Failures

Chair: Ishwar Parulkar, Sun

- Error tolerance: Why and how to use slightly defective digital systems. Melvin Breuer, Keith Chugg, Sandeep Gupta and Antonio Ortega

5:00-6:00 Invited talk – Brad McCredie, IBM

Moderator: Pia Sandia, IBM

6:00 Reception and Dinner at the University of Texas Club

March 27, 2008

7:45-8:30 Continental Breakfast in the Lobby

8:30-10:00 Design for Reliability

Chair: Michael Mueller, IBM

- End-to-End Test-Enabled Low-Power Adaptation for Wireless OFDM Systems. Rajarajan Senguttuvan, Muhammad M. Nisar, Shreyas sen, vishwanath natarajan and Abhijit Chatterjee
- A Perspective on Developing IP for Embedded Reliability. Daryl Bradley
- CASP: Concurrent Autonomous Chip Self-Test Using Stored Test Patterns. Yanjing Li, Samy Makar and Subhasish Mitra

10:00-10:30 Break

10:30-12:00 Derating

Chair: Arijit Biswas, Intel

- Characterizing Instruction-level Error Derating. Jeffrey Cook and Craig Zilles
- Design For Reliability: An Analysis of Logical Masking on Transient Faults. Derek Graham
- Scalable Calculation of Logical Masking Effects for Selective Hardening Against Soft Errors. Ilia Polian, Sudhakar Reddy and Bernd Becker

12:00-1:00 Lunch

1:00-2:00 Invited Talks – Customer view of soft error rate requirements

Moderator: Dennis Abts, Google

Speakers

Sara Michalek, LANL

Shi-Jie Wen, Cisco

2:00-2:30 Break

2:30-4:00 Audience Discussion– How low is low enough?

Moderator: Alan Wood

4:00-5:00 Closing Remarks

Moderator: Wendy Bartlett, HP