



# CALL FOR PAPERS – TAU 2020

ACM International Workshop on Timing Issues in the  
Specification and Synthesis of Digital Systems

Mar 19-20, 2020 – Monterey, CA – <https://www.tauworkshop.com>



It has become clear that timing analysis is NO longer a solved problem. So, what are new challenges as the industry embraces 7/5/3nm and below, rides the wave of ultra-low-power mobile, wearable devices and jumps on the IoT bandwagon? Are there new issues with older nodes, 14/28nm and up, in new design use cases? How do we model timing/power interactions? How do reliability requirements coming from ADAS/IoT and related impact timing? How do we apply AI/ML/Data Science techniques to the timing domain? How do we meet the insatiable demands for accuracy, performance and functionality? What new fundamental challenges are coming from process physics, 3D, variability, voltage sensitivity, analog effects, mixed signal modeling and validation?

The TAU series of workshops provide an informal forum for practitioners and researchers working on these and other temporal aspects of analog and digital systems to disseminate early work and engage in a free discussion of ideas. The twenty-seventh in the TAU series, the **TAU 2020** workshop invites submissions and proposals from the traditional as well as emerging areas related to the timing properties of digital electronic systems, including but not limited to the topics listed below.

#### Timing (including incremental timing)

- System-level timing
- Circuit/gate-level timing
- Transistor-level timing
- Timing of mixed signal circuits
- New types of latches, dual-edge devices, etc.

#### Variability

- Timing analysis under variation and uncertainty
- Ultra-low voltage induced variation effects
- Statistical timing analysis and optimization
- Sensitivity/criticality analysis
- Yield analysis and optimization

#### Characterization

- Efficient cell (library) characterization
- Variation effects and corner reductions
- Latch characterization
- Simulation and characterization of SRAM circuits

#### Emerging technologies

- Full custom design analysis
- Special circuit families
- Timing issues for 3D ICs and TSVs
- New modeling techniques and machine learning
- Timing implications of emerging technologies

#### Modeling and simulation

- Transistor level modeling
- Analog circuit modeling
- Circuit level simulation
- Delay models and metrics
- Reliability modeling and simulation

#### Power, trade-offs and optimization

- Timing issues in low-power design
- Power-delay tradeoffs
- Identifying timing criticality in presence of voltage drop/supply noise/variability
- Optimizing design in presence of non-constant supply (drop/noise/variability)

#### Clocking

- Complex clock trees and networks
- Clocking, synchronization, and skew
- Clock domains, static/dynamic logic
- Novel clocking schemes

#### Others

- Integrated functional-temporal analysis
- Formal theories and methods
- Asynchronous systems
- Smart sensor placement
- FPGA Design and Analysis

#### DATES

##### Paper submission

##### deadline:

December 1, 2019

##### Acceptance notification:

January 11, 2020

##### Camera ready papers due:

January 18, 2020

##### Contest registration

##### deadline:

October 31, 2019

##### Early binary due:

February 1, 2020

##### Final binary due:

February 15, 2020

#### ORGANIZATION

##### General chair:

João Geadá (Ansys)

##### Technical program chair:

Paul Pereira (Qualcomm)

##### Past chair:

Song Chen (Synopsys)

##### Contest chair:

Jignesh Shah (Intel)

**Timing contest:** As in prior years, TAU is organizing a timing contest. The topic for the TAU 2020 contest is "Delay Calculation using Current Source Models". Details are posted at the contest website, <https://sites.google.com/view/taucontest2020/home>. Winners of the contest will be awarded plaques as well as cash prizes!

#### SUBMISSION OF PAPERS

All papers must be submitted electronically via the workshop website [www.tauworkshop.com](http://www.tauworkshop.com). In order to allow for a blind review, submitted pdf version of the papers should not contain the authors name or any direct reference to the authors. TAU is a workshop aimed at fostering a high level of professional interaction, not a conference. Copies of papers will be provided to the attendees, but the proceedings will not be published by the ACM or the IEEE. Therefore, *accepted papers can still be submitted to other conferences and journals.*