

## Organizers

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## Steering Committee

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# CALL FOR PAPERS

Approximate Computing leverages the intrinsic error resilience of applications to inaccuracy in their inner calculations to achieve a required trade-off between efficiency, performance, and power demand and acceptable error of returned results. In particular, for audio, image, and video processing, data mining, and information retrieval, approximate results are hard to distinguish from perfect results. In recent years, Approximate Computing applicability has been broadening, and it has been representing a breakthrough in many scientific areas. Suitable solutions come from approximate arithmetic operators, implemented both at the hardware and software level, but from unreliable memory architectures, integrated circuit tests, compilers, etc. **This year's event will be in conjunction with DAC 2022.**

The aim of this workshop is the investigation of connections between approximate computing paradigm and the verification, the test, and the reliability of digital circuits from two points of view:

1. how the approximate computing paradigm impacts integrated circuits' design and manufacturing flow.
2. How can the verification, testing, and reliability disciplines be exploited in the approximate computing paradigms?

The areas of interest include, but are not limited to, the following topics:

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| <ul style="list-style-type: none"> <li>• Approximation for Deep Learning Applications</li> <li>• Approximation techniques for emerging processor and memory technologies</li> <li>• Approximation-induced error modeling and propagation</li> <li>• Approximation in Edge computing applications</li> <li>• Approximation in HPC and Embedded systems</li> <li>• Approximation in Near-Memory and Database Processing</li> <li>• Architectural support for Approximation</li> <li>• Dependability of approximate circuits and systems</li> <li>• Design automation of Approximate architectures</li> <li>• Design of reconfigurable Approximate architectures</li> </ul> | <ul style="list-style-type: none"> <li>• Error Resilient Near-Threshold Computing</li> <li>• Test and fault tolerance of approximate systems</li> <li>• Hardware/software co-design of Approximate systems</li> <li>• Language, compiler, and operating system support for approximate architectures</li> <li>• Modeling, specification, and verification of approximate circuits and systems;</li> <li>• Safety and reliability applications of approximate computing</li> <li>• Security in the context of Approximation</li> <li>• Software-based fault tolerant technique for approximate computing</li> <li>• Techniques for monitoring and controlling approximation quality</li> </ul> |
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**Contributions:** AxC22 accepts **Extended Abstract** submissions, up to **2 pages**. Authors are also invited to extend their accepted papers for a full-paper submission, up to 6 pages.

**Publication:** AxC22 will distribute electronic format informal proceedings online on the workshop website.

**Submission:** Papers should be submitted in a standard IEEE format (you can find a template [https://www.ieee.org/conferences\\_events/conferences/publishing/templates.html](https://www.ieee.org/conferences_events/conferences/publishing/templates.html)). Further submission guidelines can be found on the workshop webpage: <https://www.iti.uni-stuttgart.de/en/chairs/ca/axc22/>

Key dates for submission:

Submission Deadline: **May 20th, 2022**  
Notification of acceptance: **June 1st, 2022**

**Further information:**

## Organizers

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