DVCon Europe – Research track

DVCon Europe 2025 took place in Munich, Germany, on October 14–15, 2025, bringing together experts from industry and academia to discuss the latest advances in design and verification of electronic systems and integrated circuits. This volume collects the accepted papers of the research track as presented at the conference and provides a snapshot of current developments in formal verification, coverage, system-level modeling, and domain-specific architectures.

The eight papers cover a broad range of topics. Several contributions advance the state of the art in formal and static analysis, from minimally intrusive safety and security verification of Rust RTIC applications to transformation-aided verification of MAC designs using symbolic computer algebra. Others address the practical challenges of coverage closure and verification productivity, proposing formal-guided test sequence optimization in UVM verification and a framework that uses large language models to generate and automatically evaluate functional coverage from natural-language requirements.

A second group of papers focuses on architectures and protocols that play a central role in contemporary systems. One paper introduces a RISC-V–based radar sequencer enabling flexible and adaptive real-time FMCW radar scenarios, while another presents DRAMPyML, a formal description of DRAM protocols using timed Petri nets to better capture complex timing constraints and hierarchical structures in modern JEDEC standards.

Finally, the proceedings include work on cross-domain modeling and system-level analysis. One contribution presents an open-source methodology to integrate SystemC TLM models into FMI 3.0 co-simulation workflows, supporting heterogeneous co-simulation across tools and domains. Another introduces variation-aware behavioral models for mixed-signal subsystems, with a focus on phase-locked loops, preserving inter-block parameter correlations from circuit level to system level.

We would like to thank all authors for submitting their work and for the effort invested in revising their papers in response to the reviews and discussions at DVCon Europe 2025. Our sincere thanks also go to the members of the Technical Program Committee and all reviewers for their thorough and constructive evaluations, and to the organizing team, sponsors, and exhibitors whose support made the conference possible.

We hope that this post-conference volume will serve as a useful reference for researchers and practitioners alike, capturing both the technical contributions and some of the momentum generated by the discussions in Munich.