



## Quantum Effects HPC Quantum AI Conference

### Call for Papers

Quantum Effects is the leading trade fair for application-oriented quantum technologies with international impact. It will secure the vanguard role of Europe in this field. Quantum Effects is taking place at the Stuttgart fairground on the 8<sup>th</sup> and 9<sup>th</sup> October 2024.

The **4 Pillars of Quantum Effects** are:

<b>COMPUTING &amp; ENABLING TECHNOLOGIES</b> Quantum computers Hardware for QT Vacuum Cooling Connecting Controlling	<b>SOFTWARE</b> Algorithms Firmware Development tool kits	<b>SENSING</b> Quantum imaging Measuring technology	<b>COMMUNICATION</b> Quantum cryptography Quantum security Post-quantum encryption
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The program with a trade show, stage program, panel discussions, Quantum Effects award, networking night event, Quantum Effects tour and more is accompanied by an academic conference program.

In collaboration with the High-Performance Computing Center Stuttgart (HLRS), the Quantum Effects is organizing the academic conference program starting with a call for papers.

### Topic Areas

#### Quantum Computing

- Technologies and Architectures
- Quantum technologies beyond Quantum Computing
- Real-world Industry Use Cases [Industry-Academia collaboration]
- Quantum-inspired Algorithms and Technologies
- Algorithms, Methods & Tuning
- Benchmarking

#### Hybrid System Architectures

- Hybrid Hardware Architecture
- Hybrid Software Architecture
- Emerging HPC/AI/QC Technologies
- AI Applications powered by HPC/QC
- Integrating HPC, QC and Neuromorphic Systems
- System and Performance Monitoring

## System Software

- Software Development and Optimization
- Cloud Solutions and Continuous Integration and Delivery
- Compiler and Tools for HPC/QC/AI Programming
- Language Models and Generative AI in HPC/QC

## Community & HPC

- Community Engagement
- Political support and Public funding
- QC Initiatives
- Development of HPC/QC/AI Skills
- Education and Training
- Young Talents Development
- Infrastructure Challenges

## Submission Types

The conference covers various tracks on different topics where the topics of HPC, QC & AI are connected. We invite you to submit abstracts presenting novel and original contributions to these fields. We offer the following formats:

- Paper
- Tutorial of 60 to 180 minutes
- Workshop of 60 to 180 minutes

We also plan to organize thematic panel sessions and a fishbowl.

## Submission Guidelines

Submissions should adhere to the following guidelines:

- **Two-Stage Process for Papers:** Submissions to this track will follow a two-stage process. In the first stage, authors are required to submit a comprehensive abstract detailing their research methodology, findings, and conclusions. If the abstract is accepted, authors will be invited to submit a full-length paper in the second stage.
- **Two-Stage Process for Tutorials and Workshops:** Submissions to this track will follow a two-stage process. In the first stage, authors are required to submit a comprehensive abstract pitching their ideas for a tutorial or workshop with a preliminary agenda and speakers (optional). If the abstract is accepted, authors will be invited to submit the final agenda including speakers in the second stage.
- **Conference Language is English:** The official language of the conference is English. All presentations, discussions, and workshops will be conducted in English. Submissions in languages other than English will not be considered for review.

## Required Submission Information

### Research Paper Track

For the Research Paper track, please provide the following information:

- Title of the Research Paper
- Author(s) Information: Name, affiliation, email address
- Short Abstract: Maximum 250 words
- Topic Area: Specify the primary topic area of your research (cf. above)
- Presentation Time: Estimated duration of the presentation

### Tutorial/Workshop Track

For the Tutorial/Workshop track, please include:

- Title of the Tutorial/Workshop
- Presenter(s) Information: Name, affiliation, email address
- Short Abstract: Maximum 250 words
- Topic Area: Specify the primary topic area of the tutorial/workshop (cf. above)
- Session Duration: Estimated length of the tutorial/workshop
- Interactive Components: Description of any interactive parts or media requirements (e.g., internet access)
- Targeted Audience: Indicate the intended audience for the tutorial/workshop
- Estimated Number of Attendees: Provide an estimate of the expected number of participants

## Conference Submission System

Please submit all abstracts [here](#) through EasyChair.

## Review Process

The submitted research paper, tutorial or workshop proposals will be reviewed by the Quantum Effects Conference Committee. During the submission process, authors must select one primary track that best aligns with their research topic. This will ensure that the abstract is reviewed by subject matter experts in the relevant field.

All submissions will undergo a **double-blind peer-review process**. Each submission will be carefully evaluated by a minimum of 2 to 3 independent reviewers, providing diverse perspectives and ensuring a comprehensive assessment. Papers will be evaluated based on several key criteria, including:

- **Relevance.** Fundamental insights and contributions to the selected field
- **Technical.** Clarity and coherence of the submission
- **Originality.** Novelty and originality of the research

All accepted presenters (papers, tutorials, or workshops) will receive complimentary registration, granting them free access to the entire two-day conference program.

## Awards

### **Best Presentation Award**

Talks will be evaluated based on criteria such as clarity and if the speaker can engage with the audience, including positive feedback from the audience.

### **Best Tutorial and Workshop Award**

Interactive workshops will be assessed on their engagement, practical applicability, and participant feedback.

### **Best Paper Award**

All accepted full-length papers will be considered for the Best Paper Award, which will be determined by a combination of review scores and the quality and number of participants during the paper's presentation session.

## Important Dates

Abstract submission deadline (paper, tutorial, workshop)	30.06.2024
Acceptance notification	28.07.2024
Camera-ready program material including full-length papers or final session agendas	15.09.2024
Final presentation slides (paper)	01.10.2024
Conference	08.-09.10.2024

For further assistance, please contact [quantum-effects@messe-stuttgart.de](mailto:quantum-effects@messe-stuttgart.de)