JUNIQ Spring School on Quantum Computing 2025

Montag, 31. März 2025 bis Freitag, 04. April 2025 | 09:00 Uhr bis 17:00 Uhr
Jülich Supercomputing Centre (JSC) | 52425 Jülich, Wilhelm-Johnen-Str.

The *Jülich Supercomputing Centre* will host the spring school on "**Quantum Computing – Applications on Gate-based and Annealing Systems**" from March 31 to April 04, 2025. The school focuses on hands-on experiences in developing and implementing algorithms on both gate-based devices and quantum annealers. Therefore the attendees will make use of JUNIQ's cloud-programming platform to access quantum devices located at the *Jülich Supercomputing Centre*. The hands-on sessions will be accompanied by several lectures covering basic concepts of gate-based and annealing systems, the design and implementation of use-cases, and big-picture lectures, all given by experts from the field. The spring school will be complemented by a poster session in which the attendees can introduce themselves and their interest in quantum computing and potentially present their own research results. Our school is free of charge and will be on-site only this year.

Topics

Introduction to Gate-Based Quantum Computing, Introduction to Quantum Annealing, Introduction to Quantum Simulation, Formulating QUBO Problems and Ising Hamiltonians, Quantum Approximate Optimization Algorithm, Emulation of Quantum Systems, Classical vs Quantum Optimization, Error Correction.

Registration

- The school is taylored to PhD students from the field of quantum computing in their first years. This, however, is not a requirement for participation.
- To register for on-site participation applications must be submitted. To submit your application and to get further information, please see our registration page.

Costs & Services

The participation is free and includes:

- One week of interesting talks given by experts from the field;
- Hands-on sessions in small groups supervised by experts;
- Lunch and coffee/tee on all days;
- Dinner on the first and the last evening;
- A tour in the Aachen/Jülich region;
- Ticket for public transportion between Aachen and Jülich for the full week;
- A welcome-bag.

Veranstalter:
Jülich Supercomputing Centre (JSC)

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52425 Jülich

https://www.fz-juelich.de/jsc

Weitere Informationen: https://go.fzj.de/jsc-springschool

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