RIKEN QUANTUM COMPUTING

https://rqc.riken.jp/

41st RQC Colloquium

Quantum, AI and the Path to Commercial Advantage

Dr. Matthias Troyer

Microsoft

January 9, 2026(Fri) **16:00–17:00**(JST)

This colloquium will be held in **HYBRID format**.

On-site Venue: Wako S01 Bioscience Bldg./ Suzuki Umetaro Hall

Online Venue: Zoom. To receive the link, register in advance at https://krs2.riken.jp/m/rqc_registration_form

The promise of quantum is real, and we are beginning to see where this technology can have the greatest impact. Decades of quantum research and development point to one primary class of practical application for quantum computing next to cryptanalysis: the simulation of quantum systems, especially for chemistry and materials science. As we continue to improve the fidelity and scale of quantum machines, we will first be able to unlock scientific quantum advantage, solving a growing class of scientifically interesting and classically intractable problems. As we scale to quantum supercomputers, we will be able to achieve commercial quantum advantage and solve the world's most pressing challenges through quantum-enabled advances in chemistry, biochemistry, and materials science. Yet scaled quantum systems won't exist in isolation but will operate alongside AI and classical supercomputing. At Microsoft, we are today architecting and engineering these hybrid classical-quantum supercomputing systems with the goal of accelerating scientific discovery.