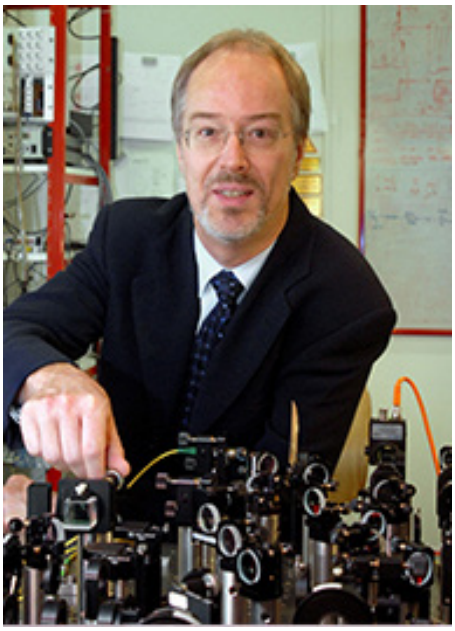
Karlsruhe Institute of Technology

KSOP
Karlsruhe School of Optics & Photonics

Speaker Karlsruhe Days of Optics & Photonics 2021



Abstract: Quantum Networks

Prof. Dr. Gerhard Rempe

Quantum optics has seeded a plethora of basic concepts and techniques such as cavity quantum electrodynamics, quantum nondemolition measurements and entanglement engineering that can now be reaped for applications in quantum information processing. Most prominent are quantum networks for secure quantum communication and distributed quantum computation, the two most important ingredients of a future worldwide quantum internet.

The talk will highlight main ideas, major achievements and recent experiments largely performed with single photons and individual atoms as model systems.

Biography

Prof. Dr. Gerhard Rempe studied mathematics and physics at the universities of Essen and Munich. He obtained his doctoral and habilitation degrees from the Ludwig-Maximilians-University, was Millikan fellow at the California Institute of Technology, professor at the University of Konstanz, and is presently director at the Max Planck Institute of Quantum Optics and professor at the Technical University Munich. He made pioneering contributions to several research fields ranging from cold atoms and cold molecules to quantum gases and quantum networks.