COLLOQUIUM OF THE INSTITUTE FOR QUANTUM INFORMATION SCIENCE AND THE DEPARTMENT OF PHYSICS AND ASTRONOMY
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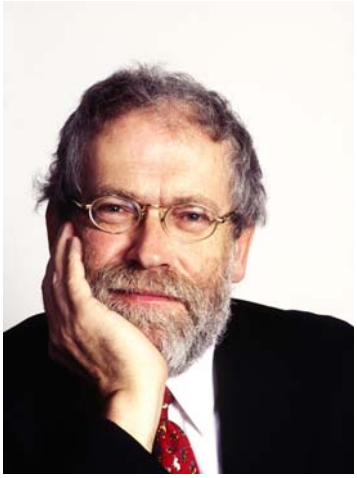

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PROF. DR. ANTON ZEILINGER

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Title: Quantum Communication and Quantum Computation with Entangled Photons

Abstract: Quantum communication with entangled photons has advanced beyond the laboratory. Entangled photon links now exist over distances up to 8 km in the city of Vienna. Such experiments have demonstrated successfully that quantum cryptography via satellites in Earth orbit is possible. Moreover, in quantum computation, probabilistic gates have been demonstrated, and recently the non-probabilistic concept of a one-way quantum computer has been realized for 4 qubits in a cluster state.

Bio: Professor Dr. Anton Zeilinger is a leader in the fields of quantum optics and quantum information and is renowned for the first experimental demonstration of quantum teleportation and other quantum information tasks. In addition to his groundbreaking research, he is known for his outstanding talks and his mentoring of graduate students: many of his students have gone on to become leaders in the field of quantum information as well. Amongst Prof. Zeilinger's numerous awards and recognition, he was named Austrian Scientist of the Year in 1996 and received the European Optics Prize in 1997, became a member of Germany's Orden Pour le Mérite fürWissenschaften und Künste in 2001, and was awarded the Klopsteg Memorial Award of the American Association of Physics Teachers 2004. He is a fellow of the American Physical Society and received the King Faisal Prize 2005.