



QuantumComm 2009
International Conference on Quantum Communication and Quantum Networking
(From Satellite to Nanoscale)
October 26 – 30, 2009 Vico Equense, Sorrento peninsula, Naples, Italy

www.quantumcomm.org

Principal Sponsors: Create-Net (www.create-net.org), ICST (www.icst.org)

SECOND CALL FOR PAPERS

[*On-line Paper Submission System is Open*]

Scope: This meeting brings together communities of experts in quantum communication, quantum information, quantum nanoscale physics, photonics, and networking. In the framework of quantum information processing the quantum communication mainly deals with encoding and securely distributing quantum states of light in optical fiber or in free space providing grounds for quantum cryptography applications. Advancements in quantum communication area over last decade have made the metropolitan quantum networks a reality. The practical secure satellite communication is clearly within the reach.

It became clear with rapid advancement of modern nanoscale technology that quantum photonic devices naturally communicate with each other either electromagnetically or by virtue of an electron transport. Basic laws of quantum physics and quantum electromagnetics govern this type of communication at nanoscale. To a macroscopic observer such nanoscale systems could appear in a form a structured or unstructured network. The cross-disciplinary merger of quantum physics and nanophotonics with principles of networking in communication opens new perspective for developing modern quantum communication applications with an eye on practical devices.

This conference is devoted to the discussion of new challenges in quantum communication and quantum networking that extends from the nanoscale to a global satellite communication networks. It will place particular emphasis on basic quantum science effects and on emerging technological solutions leading to practical applications in communication industry.

STEERING COMMITTEE:

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CONFERENCE

COORDINATOR:
Robert Varga, ICST

Technical Topics and Program Chairs:

1. **Free-space Quantum Communication on Earth and Space**
Chair: Paolo Villorosi (University of Padova, Italy)
2. **Long-distance quantum communication in telecom fiber networks**
Chair: Harald Weinfurter (University of Munich, Germany)
3. **Quantum electron transport in nanoscale semiconductor structures**
Chair: Axel Lorke (University of Duisburg-Essen, Germany)
4. **Nanophotonics devices for quantum communication**
Chair: Lorenzo Pavesi (University of Trento, Italy)
5. **Hybrid quantum systems: connecting Photons - Atoms - Solid state devices**
Chair: Jörg Schmiedmayer (Technical University of Vienna, Austria)
6. **Superconducting nanoscale devices in quantum communication**
Chair: Andrea Fiore (Technical University Eindhoven, Netherlands)
7. **Nanomechanical quantum systems and their interaction with nonclassical light**
Chair: Markus Aspelmeyer (University of Vienna, Austria)
8. **Entanglement as a resource for quantum communication**
Chair: Saverio Pascazio (University of Bari, Italy)
9. **Practical applications of quantum communication and networking**
Chair: Andreas Poppe (Austrian Institute of Technology -AIT)

Workshop

Quantum and Classical Information Security

Chair: Romain Alléaume (Institut télécom / Télécom ParisTech, France)

IMPORTANT DATES

Initial 2-Page Summary

Submission:

June 30, 2009

Acceptance Notification:

July 30, 2009

Full Camera-Ready

Version:

August 30, 2009

QuantumComm Conference:

October 26-30, 2009

SUBMISSION INSTRUCTIONS: All authors are required to submit a 2-page Summary of their presentation by the May 31 deadline followed by a PDF version of the full paper in English. Full papers are limited to 12 pages (invited papers), or 8 pages (contributed papers), and must fulfill the submission details listed at: <http://www.quantumcomm.org/submission.shtml>. Presentation will be either oral or in poster format, as deemed appropriate by the Technical Program Committee.

PUBLICATION: All submitted papers will be subject to a rigorous peer-review. Accepted papers will be published by Springer in the QuantumComm Conference Proceedings, under the LNICST - joint publication series of ICST and Springer - <http://www.springer.com>.

Preliminary list of Keynote and Invited Speakers:

Keynote Speakers:

Jörg Kotthaus,

Ludwig-Maximilians-Universität München

Title: "Non-equilibrium interaction between quantum devices"

Eugene S. Polzik,

Niels Bohr Institute, Copenhagen University

Title: "Quantum communication between quantum memories"

Invited Speakers (updated weekly)

Acin	Antonio	ICFO - Institut de Ciències Fotòniques, Barcelona
Berggren	Karl	Massachusetts Institute of Technology (MIT)
Bianco	Giuseppe	Italian Space Agency (ASI)
Bose	Sougato	University College London
Eaves	Laurence	The University of Nottingham
Fuchs	Christian	Institute of Communications and Navigation of the German Aerospace Center (DLR)
Gatti	Alessandra	Università degli Studi dell'Insubria, Italy
Gol'tsman	Gregory	Moscow State Pedagogical University (MSPU)
Hughes	Richard	Los Alamos National Laboratory (LANL)
Ihn	Thomas	ETH Zürich
Jürgen	König	University of Duisburg-Essen
Laurat	Julien	Laboratoire Kastler Brossel-UPMC, Paris
Lipson	Michal	Cornell University
Marquardt	Florian	Ludwig-Maximilians-Universität München
Omar	Yasser	Technical University of Lisbon
Pruneri	Valerio	ICFO Barcelona
Shields	Andrew	Toshiba Cambridge Research Laboratory
Tang	Hong	Yale University
Thew	Robert	Université de Genève
Tittel	Wolfgang	University of Calgary
Ursin	Rupert	Institute for Quantum Optics and Quantum Information Austrian Academy of Sciences

Wendin Göran Chalmers University of Technology

Zbinden Hugo Université de Genève

Workshop on quantum and classical information security

Invited:

Granboulan Louis EADS, France

Piper Fred Royal Holloway, UK (to be confirmed)

Quisquater Jean-Jacques UCL, Belgium

Renner Renato ETHZ, Switzerland

Sendrier Nicolas INRIA, France