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## PRESS RELEASE

**"FOR IMMEDIATE RELEASE"**

Madrid, 26<sup>th</sup> May, 2009

### **Future global networks will be quantum networks**

*The application of quantum technologies to communications networks promises revolutionary changes to the secure, high-speed transmission of information across wired and wireless networks.*

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Nowadays telecommunications networks employ complex mathematical algorithms as security keys to encrypt and decrypt information that requires secure transmission. However, this system is not infallible. The latest developments in the field of mathematics predict that, in time, these networks will become even more vulnerable to hacker attacks. This explains the recent exploration of the application of Quantum Physics to encryption systems, yielding excellent results that practically guarantee the prevention of Internet-related "eavesdropping" or "snooping", as well as providing effective resistance against hacker attacks. Quantum cryptography, which underscores quantum networking, provides the most secure mode of information transmission devised to date, precisely because the system itself detects the very act of eavesdropping, which leaves unmistakable traces. This in turn, can lead to the detection and identification of the intruder.

The quantum networking technologies being developed are fully compatible with standard Internet technologies in current use. Yet, quantum cryptography is not the only example of the dramatic effect that the application of quantum physics will have on networking research. Quantum technologies will also define areas such as networks transmission, commutation and routing.



With the objective of identifying possible research areas in networks and quantum technologies and of establishing some form of collaboration between its participants, IMDEA Networks' Scientific Council shall be meeting in June 16th and 17th with a distinguished group of invited scientists, from 10 countries, who represent pioneering organizations in the development and implementation of quantum networks such as BNN Technologies, Institute of Quantum Computing, id Quantique, Telefonica I+D and the European Commission, amongst others.



*Several members of IMDEA Networks' Scientific Council: (from left to right) David del Val (Telefonica R+D, Spain), Ioannis Stavrakis (NKUA, Greece), Mark Evamy (IMDEA Networks, Spain), Arturo Azcorra (IMDEA Networks, Spain), Gonzalo Camarillo (Ericsson Labs, Finland), Ralf Steinmetz (TU Darmstadt, Germany), Zhi-Li Zhang (Univ. of Minnesota, USA), Huw Oliver (Univ. of Bristol, UK), Jon Crowcroft (Univ. of Cambridge, UK).*

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## ABOUT IMDEA NETWORKS

IMDEA Networks is an international research institute supported by the Regional Government of Madrid and the European Union. The Institute brings together distinguished and young scientific researchers to develop cutting-edge science and technology in the field of networking. In order to ensure a truly international perspective, the Institute's working language is English. Promoting interdisciplinary collaboration, the Madrid-based Institute works in partnership with leading businesses and scientists from around the globe. By generating new knowledge and understanding through its activities, the Institute supports the continued development of Madrid and Spain as a centre for international scientific and technological research.

[www.networks.imdea.org](http://www.networks.imdea.org)

### CONTACT INFORMATION – FOR INFORMATION PURPOSES ONLY

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