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Felix Kuschenitz Preis for Quantum Theorist

Yet another young
Innsbruck-based physicist wins award

Institut für Quantenoptik und Quanteninformation
Österreichische Akademie der Wissenschaften

Otto Hittmair-Platz 1 / Technikerstraße 21a
6020 Innsbruck, Austria, Europe
Tel +43 512 507 4701
Fax +43 512 507 9815
iqoqi-ibk@oeaw.ac.at
www.iqoqi.at

Geschäftsführender Direktor
Univ.Prof. Dr. Rainer BLATT
rainer.blatt@oeaw.ac.at

The Austrian Academy of Sciences (ÖAW) today presents Tyrolean physicist Dr. Wolfgang Dür with the Felix Kuschenitz Preis. Theorist Dür is a researcher at the Institute for Quantum Optics and Quantum Information (IQOQI) and has contributed inspiring ideas to the theory of quantum information processing.

Quantum-mechanical entanglement, a term coined way back by Erwin Schrödinger, is today seen as an important means, you could say a fuel, for future applications of quantum information technology. The theoretical description of such entanglement as a resource poses a stubborn and conceptionally highly demanding problem. Wolfgang Dür has made several decisive contribution to this issue, some of which have shaped the direction of research. They include the discovery of different kinds of entanglement of three and more particles, developing various methods of achieving entanglement and applying them in the area of quantum information and the quantum computer. He also managed to overcome another significant problem in quantum communication. Unlike classic signals, quantum information, for instance in the form of polarization states of individual light particles, cannot be amplified without losing essential quantum characteristics. The schema of a quantum repeater as suggested by Wolfgang Dür and colleagues solves this problem and has opened up a path for future applications, especially in the area of quantum communication across great distances.

Successful young scientist

“Wolfgang Dür is a worthy recipient for this award when you think of the number of exceptional, internationally acclaimed contributions he has made to the field of quantum information,” explained his mentor, Prof. Hans Briegel, one of the scientific directors at the Institute for Quantum Optics and Quantum Information. “Dür is a very productive young scientist. His work has been cited more than 1,950 times to date, an extraordinary achievement for someone of his age”. Wolfgang Dür was born in Innsbruck in 1973. He graduated from the University of Innsbruck in physics and obtained a teaching



degree for physics and mathematics. In 2001 he was awarded a doctorate sub auspiciis presidentis and went to Munich as a Marie-Curie research fellow in Hans Briegel's working group. Since 2005 Dür has been carrying out research at the Institute for Quantum Optics and Quantum Information of the Austrian Academy of Sciences in Innsbruck. Wolfgang Dür is married, with two children. When his family commitments allow, he enjoys walking in the Tyrolean mountains or travelling to far-away countries.

The Felix Kuschenitz Preis was founded in 1940 and has been awarded biannually since 1959. It was endowed by Vienna-born entrepreneur Felix Kuschenitz, who also acted as director of the Volksopernbetriebsgesellschaft and member of its board. He was decorated with the Ritterkreuz of the Order of Franz Joseph and died in Vienna in 1936, aged 68. The prize is worth 3,700 euros and is awarded for independent research in chemistry and physics. Former recipients include Ignacio Cirac, Christoph Kratky, Roman Söhl and Helmut Rauch.

You can find a photograph of Dr. Wolfgang Dür on: <http://www.iqoqi.at/media/download/>

Kontakt:

Dr. Wolfgang Dür

Institute for Quantum Optics and Quantum Information

Technikerstr. 21a

6020 Innsbruck, Austria

Tel: +43 512 507 4744

Email: Wolfgang.Duer@oeaw.ac.at

web: <http://www.iqoqi.at>

Dr. Christian Flatz

Public Relations

Tel. +43 650 5777122

E-Mail: pr-iqoqi@oeaw.ac.at

Univ.-Prof. Dr. Hans Briegel

Institute for Theoretical Physics

University of Innsbruck

Technikerstr. 25, 6020 Innsbruck, Austria

Tel.: +43 512 507- 6202

Email: Hans.Briegel@uibk.ac.at

Institute for Quantum Optics and Quantum Information

Technikerstr. 21a, 6020 Innsbruck, Austria

Tel: +43 512 507 4740

Email: Hans.Briegel@oeaw.ac.at