

Garching, June 5<sup>th</sup>, 2013

Press Release

## Max Planck Society gives Otto Hahn Medal to Dr. Fernando Pastawski



**Dr. Fernando Pastawski, a former doctoral student in the group of Professor Ignacio Cirac at the Max-Planck-Institute of Quantum Optics (Garching near Munich), has been awarded the Otto Hahn Medal 2012 of the Max Planck Society (MPG). Since 1978 the MPG presents this honour annually to junior scientists for scientific achievements connected to their doctoral thesis. The award is endowed with prize money and is intended to encourage highly talented people to decide for a career in fundamental research. Dr. Pastwaski receives this award “for theoretical studies of storage, experimental implementation, and technical applica-**

**tion of quantum information”.**

Fernando Pastawski was born in Córdoba (Argentina) in 1982. In 2000 he began his studies of computer science and physics at the Universidad Nacional de Córdoba where he received his diploma in computer science in 2005 and in physics in 2008. In April 2008 he began his doctoral thesis at the Ludwig-Maximilians-Universität Munich under the supervision of Prof. Ignacio Cirac. He completed his dissertation on “Quantum memory: design and applications” in July 2012 with Summa Cum Laude. Dr. Pastawski continued his research as a postdoctoral research scholar in the group of Prof. Ignacio Cirac until February 2013.

In the course of his dissertation Pastawski has obtained groundbreaking results on the storage of quantum information. This is essential for exploiting the high potential of quantum mechanics for information processing, and in particular for the realization of quantum computers. With mathematical models of many-body systems Pastawski was able to show the limitations inherent in present concepts for quantum storages. At the same time he developed a novel concept of realizing a coherent storage based on controlled dissipation. Other calculations led to important insights on the experimental realization of a room-temperature quantum storage which led to a record in the coherence times. Furthermore he developed protocols which used the properties of quantum information to avoid falsifications. He was able to demonstrate that such protocols can be made tolerant to noise while ensuring rigorous security at the same time.

At the end of March 2013 Dr. Pastawski moved to the California Institute of Technology (Pasadena, USA) where he works in the group of Prof. Alexei Kitaev and Prof. John Preskill. Dr. Pastawski will be presented with the Otto Hahn Medal on the occasion of the General Meeting of the Max Planck Society in Potsdam on June 5<sup>th</sup>, 2013. *Olivia Meyer-Streng*

**Press &  
Public Relations**  
Dr. Olivia Meyer-Streng

Phone:  
+49 - 89 / 32 905-213  
E-mail: [olivia.meyer-streng@mpq.mpg.de](mailto:olivia.meyer-streng@mpq.mpg.de)

Hans-Kopfermann-Str. 1  
D-85748 Garching

Phone: +49 - 89 / 32 905-0  
Fax: +49 - 89 / 32 905-200

**Contact:**

**Dr. Fernando Pastawski**

California Institute of Technology  
Pasadena, California 91125, USA

E-mail: [ferpas@caltech.edu](mailto:ferpas@caltech.edu)