

Prof. Dr. Joachim von Zanthier

AG Quantum Optics and Quantum Information
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Nationality: German

Research Interests

collective effects of light and matter:

State engineering of light and matter
Non-classical spatial and temporal photon correlations
Multi-photon-interferences at optical and x-ray wavelengths
Collective light emission
Quantum imaging

Professional Experience

- since 12/2004 **Associate Professor**
Leader of working group *Quantum Optics and Quantum Information*
Institute of Optics, Information and Photonics,
Friedrich-Alexander University Erlangen-Nürnberg, Germany
- 1995 – 2004 **Group leader *Optical Frequency Standard and Precision Spectroscopy with trapped In⁺ ions*** with Prof. Herbert Walther,
Max-Planck-Institute of Quantum Optics, Garching, and Department of
Physics, Ludwig-Maximilians-University, Munich, Germany;
Worked on optical frequency standard based on a single trapped In⁺ ion,
group was first to find In⁺ clock transition (natural line width ~ 1 Hz),
performed first absolute frequency measurement of In⁺ clock transition
(using frequency comb technique in collaboration with Prof. Ted Hänsch),
set up < 1 Hz linewidth laser system for In⁺ clock transition; investigated
various quantum optical phenomena involving trapped ions in collaboration
with Prof. Girish S. Agarwal
- 07/2002 **Habilitation** at Ludwig-Maximilians-University, Munich, Germany
Title of Habilitation Thesis: *Experiments with single trapped Ions – from
fundamental aspects to an optical frequency standard*
- 1996 - 2004 **Assistant** at the chair of Prof. Herbert Walther,
Department of Physics, Ludwig-Maximilians-University, Munich
- 1995 - 1996 **Postdoc** with Prof. Herbert Walther,
Max-Planck-Institute of Quantum Optics, Garching, Germany

Education

- 1991 - 1995 **Ph.D. at the Institute of Optics, University Paris VI, Paris, France**
Ph.D Supervisor: Prof. Dr. Alain Aspect
Title of Ph.D. thesis: *Enhancement of evanescent waves for an atomic mirror using dielectric films*
first PhD student in newly formed *Atom Optics Group* of Prof. Alain Aspect at the Institute of Optics; set up new laboratory with magneto-optical trap for Rb atoms to implement an atomic mirror formed by light
- 1990 - 1991 **Diplôme d'Etudes Approfondies (D.E.A.) Quantum Physics at the Ecole Normale Supérieure (E.N.S.), Paris, France**
Supervisor: Prof. Dr. Serge Haroche
- 1986 - 1990 **Undergraduate and Graduate Studies of Physics at the Ludwig-Maximilians-Universität, Munich, Germany**
Elective subjects: quantum optics, mathematics
- 08/1989 - 10/1989 **Intern at Max-Planck-Institute for Quantum Optics, Garching, Germany**
Group of Prof. Dr. Herbert Walther
- 08/1988 - 10/1988 **Intern at the Stanford Linear Accelerator Center (SLAC), Stanford, USA**
Group of Prof. Dr. Matteo Cavalli-Sforza

Memberships/Awards

- since 2017 Member of the Management Board of the Physics Department
- since 2017 Managing Director of the Optics Division of the Physics Department
- since 2017 Member of the International Max Planck Research School *Physics of Light*
- since 2013 Founding member of Optical Imaging Center Erlangen (OICE)
- since 2011 Chairman of Faculty-Club, University Erlangen-Nuremberg
- since 2010 Associate Investigator of *Graduate school of Advanced Optical Technologies (SAOT)*, funded by the German Research Foundation (DFG) in the framework of the German excellence initiative
- 2007 - 2012 Official Host of Humboldt Research Awardee Prof. Girish S. Agarwal, FRS, Texas A&M University, College Station, USA, during his visits to Germany
- 1994 - 1995 Member of *Circle Member Group*, International Young Academics Program of Daimler-Benz AG, Stuttgart, Germany
- 1991 –1994 PhD Scholarship of the French Ministry for Science and Technology
- since 1990 Member of the German Physical Society