

Curriculum Vitae
Prof. Stephan Schiller, Ph.D.
(born October 24, 1963)
www.exphy.uni-duesseldorf.de

Education:

- 1981 European Baccalaureate, Scuola Europea Varese (Italy)
- 1987 Diplom in Physik, *summa cum laude*, Technical University Munich
- 1993 Ph.D. in Applied Physics, Stanford University
- 1997 Habilitation in Experimentalphysik, Universität Konstanz

Employment:

- 1986 -1988 Research and teaching assistant (Advisor: Prof. P. Wölfle), University of Florida, Gainesville
- 1988 -1993 Research assistant (Advisor: Prof. R.L. Byer), Stanford University
- 1993 -1997 Group leader (chair: Prof. J. Mlynek), Universität Konstanz
- 1997 -1999 Lecturer (Hochschuldozent), Universität Konstanz
- 1999 - present Chair of Experimental Physics (C4), Heinrich-Heine-Univ. Düsseldorf

Current research topics:

- Ultracold molecules, sympathetic cooling
- Ultrastable lasers, high-resolution spectroscopy, optical frequency measurements, optical clocks
- Measurement of fundamental constants
- High precision tests of Relativity in the laboratory and on satellites
- Nonlinear optical frequency conversion, continuous-wave optical parametric oscillators

Young scientist advising:

Advisor to 12 students that obtained a Ph.D. degree, to 21 students that graduated with a „Diplom“ or Master’s degree, and of 12 post-doctoral fellows, among which 6 Alexander-von-Humboldt fellows and one Heinrich-Hertz-Fellow. Currently, advising 7 graduate students. Host of an “experienced Alexander-von-Humboldt researcher (Prof. K. Brown)”; Host of a EU-Marie-Sklodowska-Curie-Action Individual Fellow; one junior scientist (B. Roth) was awarded the Habilitation (2007)

Publications and presentations

133 publications in refereed international journals
36 conference proceedings papers, 2 book chapters, 2 special issue editor,
3 US patents, 1 German patent,
Over 110 invited presentations at conferences and at universities,
Over 185 contributed presentations to national and international conferences.

Awards & Nominations:

- Study fellowship of Wasag AG, 1983-1986
- CERN Summer Student 1984
- Studienstiftung des Deutschen Volkes, 1987
- Eurotary Prize, 1995
- Otto-Klung Prize, 1997
- Gerhard-Hess Research Prize of the German Science Foundation, 1998
- Offer of a C4 Professor position at the Universität Greifswald, 1999
- Reinhard-Heynen- und Emmi-Heynen-Prize of the Society of Friends and Sponsors of Heinrich-Heine-Universität Düsseldorf 2015

Cooperations (past and present):

Univ. Kaiserslautern, Tel-Aviv-University, Bogoliubov Laboratory Dubna, INRE Sofia, ZARM Bremen, Humboldt-Univ. Berlin, Univ. Firenze, SYRTE Paris, PTB Braunschweig, NPL Teddington, Univ. Köln, Univ. Birmingham, INRIM Torino, and others

Cooperations with industry:

LINOS (D), Sirah GmbH (D), Thales Research and Technology (F), TOPTICA (D), Menlo Systems (D)

Projects:

National: 32 grants from DFG, BMBF, DLR, ESOC, BMWI, Land NRW, Düsseldorf School of Oncology (1995-2015)

Coordinator of DLR *cooperative* project "Entwicklung optischer Atomuhren auf der Basis ultrakalter Atome für Weltraumanwendungen" 2007-2009 (partner: PTB Braunschweig and Prof. Görlitz, Univ. Düsseldorf)

Coordinator of DLR *cooperative* project „Entwicklung eines Mikrowellen-optischen Lokalszillators“ 2012-14

International:

1993-6 EC Network "Nonclassical Light",

1994-8 Kurt Lion Foundation "Optical synthesizer development"

1996-8 EC ESPRIT Project "Advanced Quantum Information Research"

1999-2001 German-Israeli Foundation, "Nonlinear-optical interactions in domain-engineered crystals"

2002-7 EC Network "Cold Molecules"

2006-9 EU-STREP project "VILLAGE - Versatile Infrared Laser source for Low-cost Analysis of Gas Emissions" (with Thales (F), Univ. Southampton (UK), Univ. Valladolid (E), NEO (N))

2006-9 ESA project "Space Optical Clocks", (with SYRTE (F), PTB (D), Univ. Firenze (I), ENS Paris (F))

2006-7 ESA project "Optical Frequency Synthesizer for Space-borne Optical Frequency Metrology" (with NPL (UK), Menlo Systems (D), Kayser-Threde (D))

2006-7 ESA project "Optical clocks as frequency and time references in ESA Deep Space Stations", (with SYRTE (F), Univ. Firenze (I), Kayser Italia (I))

2007-today Coordinator of ESA Project "Space Optical Clocks" (partners: SYRTE Paris, PTB Braunschweig, LENS/Univ. Firenze, ENS Paris, and many more)

2007 Co-Prime Proposer of mission "Einstein Gravity Explorer" to ESA within the Cosmic Vision Program 2015-2025

2010 Co-Proposer of mission "STE-QUEST" to ESA within the Cosmic Vision Program 2015-2025; selected as a candidate mission in 2011

2011-15 Coordinator of EU-FP7-SPACE Project "Space Optical Clocks 2" (16 partners from D, I, F, CH, UK)

2011-14 Member, ESA Mission Concept Science Study Team "STE-QUEST"

2012-14 Member ESA Instrument Consortium "STE-QUEST Atomic Clock"

2013-16 Member of EU-ITN "COMIQ", Cold Molecular Ions at the Quantum limit

2013-16 Member of EU-ITN "FACT", Future Atomic Clock Technology

2015-18 Member of EU-H2020-MSCA-RISE project "Q-Sense", Quantum sensors - from the lab to the field

2016-17 Host of Horizon2020-Marie-Sklodowska-Curie-Action Individual fellow

Participation in Conference Organizations: (last and current years only)

Workshop on an Optical Clock Mission within ESA, Düsseldorf 2007 (organizer)
International Workshop on Optical Clocks, Frascati 2007 (board)
7th Symposium on Frequency Standards and Metrology, Pacific Grove 2008
Modern Applications of Trapped Ions, Les Houches May 2008 (board)
EQEC Munich 2011 (board),
QED Cargèse 2012 (board)
Cold Molecular Ions, Düsseldorf 2014 (local organizer)
Symposium on Frequency Standards and Metrology, Potsdam 2015 (int.l committee)

Other professional activities:

Confidential docent of the Kuratorium Nobelpreisträgertagung Lindau (until 2013)
Reviewer for EU, ERC, A. v. Humboldt Foundation, DFG, ANR, Austrian Science Foundation, various journals
Member, Fundamental Physics Roadmap Advisory Team of ESA (2009-10)

Teaching:

Both at the University of Konstanz and at the University of Düsseldorf I was and currently am involved on a regular basis with teaching of Bachelor and Master courses in Physics.

Lectures taught include (SWS= teaching hours per week and per semester):

“Experimental Mechanics and Thermodynamics” (4 SWS with experiments),
“Experimental Electricity” (4 SWS with experiments),
“Laser Physics” (3-4 SWS), including theoretical exercises
“Nonlinear Optics (2-4 SWS), with laboratory exercises,
“Optics” (2 SWS),
“Electronics laboratory” (4 SWS, co-developer): laboratory course
“Atomic Physics” (3 SWS), with theoretical exercises and demonstration experiments,
“Experimental Quantum Optics” (3 SWS), with theoretical exercises,
“Introduction to Molecular Spectroscopy” (2 SWS)
“Undergraduate seminar” (1 SWS)
“Physics for Chemistry, Biochemistry and Economy of Chemistry students” (4 SWS)
“Laser Applications for Physics and Medicine” (3 SWS), with laboratory exercises