

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, <i>summa cum laude</i> , Technische Universität München
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 -1999	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
Optical atomic clocks, ultrastable lasers
Measurement of fundamental constants
High precision tests of Relativity in the laboratory and on satellites
Nonlinear optical frequency conversion, continuous-wave OPOs

Advising/Hosting

Advisor to	12 students who obtained a Ph.D. degree 11 graduate students (currently) 12 post-doctoral fellows, (incl. 6 Alexander-von-Humboldt fellows, 1 Heinrich-Hertz-Fellow, 1 Marie-Curie fellow) 1 junior scientist was awarded the Habilitation (B. Roth, 2007) 23 students who obtained a „Diplom“ or Master’s degree
Host of	1 “experienced Alexander-von-Humboldt researcher” (Prof. K. Brown);

Publications and presentations

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

Awards & Nominations

1983-86	Study fellowship of Wasag AG
1984	CERN Summer Student 1984
1987	Studienstiftung des Deutschen Volkes
1995	Eurotary Prize
1997	Otto-Klung Prize
1998	Gerhard-Hess Research Prize of the German Science Foundation
1999	Offer of a C4 Professor position at the Universität Greifswald (not accepted)
2015	Reinhard-Heynen- und Emmi-Heynen-Prize of the Society of Friends and Sponsors of Heinrich-Heine-Universität Düsseldorf
2017	ERC Advanced Grant for project “PREMOL”

Cooperations with research groups (*past and present*)

Univ. Kaiserslautern, Tel-Aviv-University, Bogoliubov Laboratory Dubna, INRNE Sofia, ZARM Bremen, Humboldt-Univ. Berlin, Univ. Firenze, SYRTE Paris, PTB Braunschweig, NPL Teddington, Univ. Köln, Univ. Birmingham, INRIM Torino, Czech Technical University, Univ. New S. Wales, *and others*

Cooperations with industry

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

Projects

National:

35 grants from DFG, BMBF, DLR, ESOC, BMWI, Land NRW, Düsseldorf School of Oncology

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

Coordinator of DLR cooperative project „Entwicklung eines Mikrowellen-optischen Lokaloszillators“ 2012-14 (*partner: PTB Braunschweig*)

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))
- 2007-19 **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 Horizon 2020-Marie-Sklodowska-Curie-Action Individual fellow
- 2017-18 **Coordinator** of ESA Project "I-SOC: Space Optical Clock on the ISS, Phase-A Scientific Part" (7 partners from D, I, F, UK, CZ)
- 2018-23 ERC Advanced grant "PREMOL"
- 2019 **Prime Proposer** of Mission "I-SOC Pathfinder" to ESA (13 partners from D, I, F, UK, CZ, E, Ro, CH, PL)

Participation in Conference Organizations (*recent 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

Reviewer for EU, ERC, A. v. Humboldt Foundation, DFG, ANR, Austrian Science Foundation
Reviewer for Phys. Rev. Lett., Phys. Rev., Nature Physics, Nature, Appl. Phys. B., Optica, etc.
Member, Fundamental Physics Roadmap Advisory Team of ESA (2009-10)
Confidential docent of the Kuratorium Nobelpreisträgertagung Lindau (until 2013)

Teaching

- *On a regular basis, at B.Sc. and M.Sc. level*
- *both at the University of Konstanz and at the University of Düsseldorf*

Lectures given include:

“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 Business&Chemistry students” (4 SWS)
“Laser Applications for Physics and Medicine” (3 SWS), with laboratory exercises
“The quantum physics of the molecular hydrogen ions” (2 SWS)
“Optics” (4 SWS), with theoretical and practical exercises

(SWS= teaching hours per week and per semester)