Plenary and Prize Talks, Evening Talks, Special Talks, Joint Symposia, Tutorials: Berlin 2015

Plenary and Prize Talks

Mo, 08:30	PV I	Plenarvortrag: Force and Function: Single Molecule Biophysics of Molecular Interactions — •Hermann E. Gaub
Mo, 13:00	PV II	Preisträgervortrag: Atomic and Molecular Reactions in Slow-Motion — •Robert Moshammer
Mo, 13:15	PV III	Preisträgervortrag: Nanophononics: investigation and manipulation of lattice dynamics and phonon transport at nanoscale level — •Ilaria Zardo, Simone Assali, Sara Yazji, Stefan Funk, Milo Y. Swinkels, Rob W. van der Heijden, Erik P. A. M. Bakkers, and Gerhard Abstreiter
Mo, 13:25	PV V	Preisträgervortrag: The Power of Coincidence — •Reinhard Doerner
Mo, 14:00	PV VI	Plenarvortrag: Complex functional nanooptics and plasmonics — •Harald Giessen
Mo, 14:00	PV VII	Plenarvortrag: The Genesis and Renaissance of General Relativity — •Jürgen Renn
Mo, 17:00	SOE 7.2	Preisträgervortrag: For cooperation please add: Carrots, sticks, both, or neither? — •Matjaz Perc
Di, 08:30	PV VIII	Plenarvortrag: Magnetic Materials for Green Technologies — •Oliver Gutfleisch
Di, 13:00	PV IX	Plenarvortrag: Nanoscopy with focused light — •Stefan Hell
Di, 14:00	PV X	Preisträgervortrag: Classification of topological quantum matter with symmetries — •Andreas Schnyder
Di, 14:30	PV XI	Preisträgervortrag: Symmetry Protected Topological Phases in One-Dimensional Systems — •Frank Pollmann
Di, 17:50	PV XIII	Plenarvortrag: From laser light to brain dynamics — •Hermann Haken
Mi, 08:30	PV XIV	Plenarvortrag: Beyond electronics: abandoning perfection for quantum technologies — •David D. Awschalom
Mi, 13:15	PV XVI	Preisträgervortrag: Light control of functional materials — •Andrea Cavalleri
Mi, 14:00	PV XVII	Plenarvortrag: Computationally Aided Materials Discovery and Design — •Mark Asta
Mi, 14:00	PV XVIII	Plenarvortrag: Cosmological Inflation - A Confrontation with Data — •Dominik Schwarz
Do, 08:30	PV XXI	Plenarvortrag: Transversal transport coefficients and topological properties — •Ingrid Mertig
Do, 13:15	PV XXIII	Preisträgervortrag: Quantum Universe — •Viatcheslav Mukhanov
Do, 13:15	PV XXIV	Preisträgervortrag: Theoretische Beschreibung des Trocknungsverhaltens dicker Photoresistschichten — •Maik Schönfeld, Jens Saupe, Steffen Schubert und Jürgen Grimm
Do, 14:00	PV XXV	Plenarvortrag: Collective Motion, Collective Decision-making, and Collective Action: From Microbes to Societies — •Simon Levin
Do, 14:00	PV XXVI	Plenarvortrag: Two-dimensional materials beyond graphene: atomically thin semiconductors — •Tony F. Heinz
Fr, 08:30	PV XXVIII	Plenarvortrag: Nanocrystalline Junctions and Mesoscopic Solar Cells — •Michael Graetzel

Evening Talks

Mi, 18:00	PV XIX	Abendvortrag: Max-von-Laue-Lecture: Unmaking the Bomb: A Fissile Material Approach to Nuclear Disarmament and Nonproliferation — •Frank N. von Hippel
Mi, 20:00	PV XX	Abendvortrag: Musikalische Rhythmen und Algorithmen: Physiker auf anderen Wegen — •Theo Geisel
Do, 18:00	PV XXVII	Abendvortrag: Lise-Meitner-Lecture: Material in neuem Licht - wie maßgeschneidertes Licht Materie strukturieren und anordnen kann — •Cornelia Denz

Special Talks

Mo, 13:15	PV IV	Spezialvortrag: Inside PRL — •Reinhardt Schuhmann
Di, 15:15	PV XII	Spezialvortrag: The German Research Foundation -- a short overview — •Cosima Schuster and Michael Mössle
Mi, 13:15	PV XV	Spezialvortrag: Apples vs. Oranges: Comparison of Student Performance in a Massive Open Online Course (MOOC) vs. a Brick-and-Mortar Course — •Michael Dubson, Ed Johnsen, David Lieberman, Jack Olsen, and Noah Finkelstein
Do, 13:15	PV XXII	Spezialvortrag: Optics in Medicine — •Michael Totzeck

Joint Symposia

Montag Vormittag	**Domain wall functionality and engineering in complex oxides** der Fve: DF (federführend), DS, KR, MA, MI, TT **Organisation:** PD Dr. Elisabeth Soergel, Universität Bonn Dr. Dennis Meier, ETH Zürich Prof. Dr. Manfred Fiebig, ETH Zürich
Montag Nachmittag	**On-surface polymerization** der Fve: CPP (federführend), HL, MI, O **Organisation:** Dr. Kathrin Müller, Universität Groningen Dr. Meike Stöhr, Universität Groningen
Dienstag Vormittag	**Neurophysics: Physical Approaches to Deciphering Neuronal Information Processing** der Fve: BP (federführend), DY, HL, MA **Organisation:** Prof. Dr. Theo Geisel, MPI Göttingen Prof. Dr. Gernot Güntherodt, RWTH Aachen
Mittwoch Vormittag	**Physics of Sustainability and Human-Nature Interactions** der Fve: SOE (federführend), DY, AGjDPG **Organisation:** Dr. Reik Donner, MPI Biogeochemistry Jena Dr. Diego Rybski, PIK Potsdam

Mittwoch Nachmittag	**Higgs Modes in Condensed Matter and Quantum Gases** der Fve: TT (federführend), DY, MA, O **Organisation:** Prof. Dr. Martin Dressel, Universität Stuttgart Prof. Dr. Dirk Manske, MPI-FKF Stuttgart
Donnerstag Vormittag	**Magic MAX Phases: Self-healing, magnetism and the next best Graphene** der Fve: MA (federführend), DS, HL, MM, TT **Organisation:** Prof. Dr. Michael Farle, Universität Duisburg-Essen
Donnerstag Nachmittag	**Geometric paradigms in modern physics** der Fve: GR (federführend), GP, MP, TT, AGPhil **Organisation:** Prof. Dr. Domenico Giulini, Universität Hannover Prof. Dr. Karl-Henning Rehren, Universität Göttingen J. Prof. Dr. Dennis Lehmkuhl, Universität Wuppertal
Freitag Vormittag	**Frontiers of Electronic Structure Theory: Many-body Effects on the Nano-Scale** der Fve: HL (federführend), CPP, MM, O, TT **Organisation:** Prof. Dr. Steven G. Louie, University of Berkeley (USA) Prof. Dr. Erich Runge, Technische Universität Ilmenau Prof. Dr. Matthias Scheffler, FHI Berlin

Tutorials: Sunday, 15 March 2015

TUT 1: **From spin models to macroeconomics** (SOE with DY/AGjDPG)

16:00	TUT 1.1	Tutorium: Economics in a nutshell, for physicists — •Sylvie Geisendorf
16:50	TUT 1.2	Tutorium: Connecting microscopic behavioral economics to macroscopic financial market models — •Sebastian M. Krause
17:40	TUT 1.3	Tutorium: You are a young and aspiring physicist. Is working at the interface with economics a good idea? — •Tobias Galla

TUT 2: **Ferroics** (DF with MA/TT)

16:00	TUT 2.1	Tutorium: Fundamentals of ferroelectric materials — •Susan Trolier-McKinstry
16:50	TUT 2.2	Tutorium: Domain walls in multiferroics as functional oxide interfaces — •Manfred Fiebig
17:40	TUT 2.3	Tutorium: Ferroelastic templates for multiferroic domain boundaries — •Ekhard Salje

TUT 3: **Nonequilibrium Renormalization Group Methods** (TT)

16:05	TUT 3.1	Tutorium: From Lunar Motion to Real Time Evolution of Quantum Many-Body Systems — •Stefan Kehrein
16:45		5 min. break
16:50	TUT 3.2	Tutorium: Functional Renormalization Group Approach to Nonequilibrium Transport through Mesoscopic Systems — •Severin Georg Jakobs
17:30		5 min. break
17:35	TUT 3.3	Tutorium: Real-Time RG: Nonequilibrium Properties of Open Quantum Systems — •Herbert Schoeller

TUT 4: **Density Functional Theory: A Computational Path to Interesting Spin-textures and Novel Skyrmions** (MA with TT)

16:05	TUT 4.1	Tutorium: Introduction to Spin-Density-Functional Theory — •Nicole Helbig
16:50	TUT 4.2	Tutorium: Determining chiral magnetism from density functional theory — •Stefan Blügel
17:35		10 min. break
17:45	TUT 4.3	Tutorium: Magneto-transport properties in spiralling spin textures — •Yuriy Mokrousov

TUT 5: **Electro Chemistry 4 Condensed Matter Physicists** (HL with MM)

16:00	TUT 5.1	Hauptvortrag: Challenges in the theoretical description of structures and processes at electrochemical interfaces — •Axel Gross
16:45		Short break
16:50	TUT 5.2	Hauptvortrag: Raman under water - Of photons, phonons and the fun of tuning the Fermi level — •Katrin F. Domke
17:35		Short break
17:40	TUT 5.3	Hauptvortrag: Scanning probe microscopies for electrochemical problems — •Gunther Wittstock