

## PLENARY TALKS



**Michal Lipson**

Columbia University, USA

May  
07



**Duncan Haldane**

Princeton University, USA

May  
08



**Steven Louie**

University of California, Berkeley, USA

“The fascinating quantum world of two-dimensional materials:  
symmetry, interaction and topological effects”

May  
09



**Gerhard Rempe**

Max Planck Institut, DEU

May  
10

## INVITED SPEAKERS (provisional list)



**Francisco Alcaraz** (IFSC-USP, BRA)  
“Free parafermionic quantum chains”



**Armando Aligia** (CAB-CNEA, ARG)  
“Effective Hamiltonians for cuprate, cobaltate and topological superconductors”



**José Soares Andrade Jr** (UFC, BRA)



**Cid Bartolomeu de Araújo** (UFPE, BRA)

“Nonlinear wave-mixing in random lasers”



**Emilio Artacho** (U Cambridge, GBR)

“New uses of SIESTA: the strongly non-equilibrium electronic processes in radiation damage”



**Pierre-Louis de Assis** (Unicamp, BRA)

“Quantum dots in a vibrating photonic waveguide: a hybrid optomechanical system”



**Vanderlei Bagnato** (USP, BRA)

“Optics with matter waves: disorder and speckle fields”

“Research and innovation in biophotonics: from cancer treatment to microbial control” #



**Márcia Barbosa** (UFRGS, BRA)

“Water: from the ice age to the nanotechnology”



**Maria José Valenzuela Bell** (UFJF, BRA)



**Márcio Bettega** (UFPR, BRA)

“All that stuff in electron and positron collisions with molecules: shape resonances, bound states and Ramsauer-Townsend minimum”



**Eduardo Bringa** (U Nac Cuyo, ARG)



**Matteo Calandra** (U Paris VI, FRA)

“Field-effect driven half-metallic multilayer graphene with rhombohedral stacking”



**Andrea de Camargo** (USP, BRA)\*✳



**Sergio Cannas** (U Nac Córdoba, ARG)

“Dipolar interactions and critical behavior in two dimensional ferromagnets: an avoided phase transition scenario”



**Sylvio Canuto** (USP, BRA)

“Molecular photophysics in liquid environment”



**Lucas Céleri** (UFG, BRA)

“Thermodynamic limits on physical processes”



**Claudio Chamon** (Boston U, USA)



**Rafael Chaves** (IIF-UFRN, BRA)\*  
“Quantum violation of an instrumental test”



**Leonardo Civale** (Los Alamos National Laboratory, USA)\*



**Mucio Continentino** (CBPF, BRA)  
“Casimir amplitudes in topological quantum phase transitions”



**Mônica Cotta** (Unicamp, BRA)  
“Bacterial adhesion and biofilm formation: what can we learn with tools at the nanoscale?”



**Evaldo Curado** (CBPF, BRA)  
“National Institute for Complex Systems” #



**Nikolay Dokholyan** (U North Carolina, USA)  
“Control of cellular networks by structural disorder”



**Stephen Doorn** (Los Alamos National Laboratory, USA)  
“Quantum emission behavior and photophysics of carbon nanotube defect states”



**Solange Binotto Fagan** (UNIFRA, BRA)  
“Ab initio simulations of 1D and 2D nanomaterials for molecule adsorption”✳



**Roberto Mendonça Faria** (IFSC-USP, BRA)\*  
“National Institute on Organic Electronics” #



**Rodrigo Neumann Barros Ferreira** (IBM Research, BRA)  
“Nanotechnology for oil and gas: bridging the gap between fundamental science and industrial solutions”



**Antonio Figueiredo** (USP, BRA)  
“National Institute on Complex Fluids: advances in the physics-biology-medicine interface” #



**Jake Fontana** (NRL, USA)  
“Tunable plasmonic nanoantennae via directed assembly”



**Adriana Fontes** (UFPE, BRA)\* ✳



**Raquel Giulian** (UFRGS, BRA) ✳



**Anderson Gomes** (UFPE, BRA)  
“Photonics National Institute for Science and Technology”#



**Thiago Guerreiro** (PUC-Rio, BRA)  
“Table-top high-energy quantum physics”



**Cecília Haddad** (Hospital Sírio-Libanês, BRA)



**Felix Hernandez** (LNMS-IFUSP, BRA)  
“Spintronics with two-dimensional electron systems”



**Hans Herrmann** (ETH, CHE)  
“Rotating matter: the bearing state”



**Risto Ilmoniemi** (NBE, FIN)  
“Towards electronically targeted, closed-loop transcranial magnetic stimulation: technology and first results”



**Ado Jorio** (UFMG, BRA)



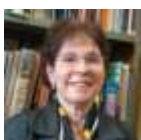
**Raman Kashyap** (EPM, CAN)



**Luciana Reyes Pires Kassab** (Fatec-SP, BRA)  
“Optical response improvement of metal-dielectric nanocomposites amplifiers based on rare earth doped germanate glasses with metallic nanoparticles”



**Jorge Kohanoff** (QU Belfast, GBR)  
“Radiation damage of biological systems from first-principles simulations”



**Belita Koiller** (UFRJ, BRA)  
“National Institute on Quantum Information” #



**Wilton de Melo Kort-Kamp** (UFRJ, BRA)\*  
“Emergent Hall physics and topological photonics in the graphene family”◆



**Danays Kunka** (Karlsruhe Inst Tech, DEU)  
“Development of optical components for X-ray multimodal imaging”



**Gabriel Landi** (USP, BRA)  
“Measures of irreversibility using quantum phase space”



**Andrea Latgé** (UFF, BRA)  
“National Institute of Carbon Nanomaterials”#



**Fernando Lázaro** (PUC-Rio, BRA)  
“National Institute of Surface Engineering”#



**Eduardo Lee** (UAM, ESP)  
“Charge localization effects in hybrid superconductor-semiconductor nanostructures”



**Marina Leite** (U Maryland, USA)  
“Functional imaging of materials for energy at the nanoscale”



**Caio Lewenkopf** (UFF, BRA)



**Arturo Lezama** (U República, URY)



**Marcelo Magnasco** (Rockefeller U, USA)



**Hernán Makse** (CUNY, USA)



**Walter Margulis** (Acreo-Se, SWE)  
“Microstructured fibers as a tool for life-science studies”



**Airton Abrahao Martin** (U Brasil, BRA)  
“Raman spectroscopy in cosmetic sciences”



**Cristina Masoller** (U Pol Catalunya, ESP)  
“Identifying and characterizing complex dynamical regimes with nonlinear data analysis tools”



**Fernando Metz** (UFMS, BRA)\*  
“Large deviation approach for the eigenvalue fluctuations of sparse random matrices”



**Tobias Micklitz** (CBPF, BRA)



**Eduardo Montenegro** (UFRJ, BRA)  
“Many-body fragmentation: beyond the Born-Oppenheimer and the independent electron approximations”



**Jean Claude M'Peko** (IFSC-USP, BRA)

“Electric field-assisted ultra-fast processing of electroceramic materials: microstructures and dielectric properties”



**Jeremy Munday** (U Maryland, USA)

“Tailoring Casimir forces and torques”



**Robert T Murray** (ICL, GBR)

“Nonlinear frequency conversion of fibre lasers – from the visible to the mid-infrared”



**Wilson Ortiz** (IFSC-USP, BRA)

“Controlling vortex dynamics in superconductors”



**Pascoal Pagliuso** (Unicamp, BRA)



**Thereza Cristina Paiva** (UFRJ, BRA)

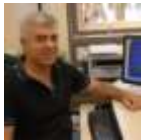
“Spatial charge and spin correlations in the 2D Fermi-Hubbard model including a Zeeman field”



**André Pasa** (UFSC, BRA)



**Ana Luiza Cardoso Pereira** (Unicamp-FCA, BRA) ✳



**Marcos Pimenta** (UFMG, BRA)

“Intralayer and interlayer electron-phonon interactions in twisted graphene heterostructure”



**Gloria Platero** (ICMM-CSIC, ESP)

“Long range photo assisted transport in quantum dot arrays”



**Tatiana Rappoport** (UFRJ, BRA) ✳

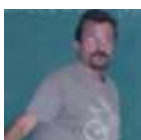


**Marcelo Bussotti Reyes** (UFABC, BRA)



**Lucimara Stolz Roman** (UFPR, BRA)

“Thin films of conducting polymers, carbon nanotubes and graphene oxide: their use in electronic devices”



**Antonio Roque** (USP-RP, BRA)

“Spontaneous activity of cortical network models”



**Douglas Alves Santos** (INPI-PR, BRA)

“Filing an invention as a patent application or publishing it in a scientific journal?”



**Leandro Seixas** (MackGraphe, BRA)

“Designing 2D materials for hydrogen production technologies”



**Vishal Shah** (QuSpin, USA)



**Jim Shaffer** (U Oklahoma, USA)

“Highly excited atoms as resources for quantum technologies”



**Antonio José Roque da Silva** (LNLS, BRA) ⊗



**Jenaína Soares** (UFLA, BRA) ✱

“Phonon signatures and interlayer coupling in two-dimensional metal monochalcogenides gallium selenide and germanium selenide”



**Rubem Sommer** (CBPF, BRA)



**Sandro Sorella** (SISSA, ITA)\*

“Emergent correlation effects when stretching graphene”



**Rogério de Sousa** (U Victoria, CAN)

“The holy grail of multiferroic physics: Bringing bismuth ferrite closer to a ferromagnet-ferroelectric phase at room temperature”



**Daniel A Vega** (IFISUR, ARG)



**Frank Wiekhorst** (PTB, DEU)

“Magnetic particle imaging for biomedical research: Current status and future perspectives”



**Julia Yeomans** (U Oxford, GBR)

“Dense active matter: topology in biology”



**Yuanbo Zhang** (Fudan U, CHN)

“Two-dimensional materials beyond graphene”

# Special **INCT** Invited

⊗ Special **SIRIUS** invited

✱ Special **National prize for women in Science** invited

◆ Special **Best Thesis SBF-2017** Invited

\*To be confirmed