

XIX Symposium on Condensed Matter Physics



Conference Program

7–11 September 2015
Belgrade, Serbia

Technical Information about the Conference

Venue

Serbian Academy of Sciences and Arts
Knez Mihailova 35, Belgrade, Serbia

Main hall, 2nd floor:

- opening ceremony
- conference sessions on Monday

Hall 2, 1st floor:

- conference sessions Tuesday - Friday

Club, 1st floor:

- poster session

Wi-Fi

- Conference Wi-Fi network:
SSID: SFKM2015, password: SFKM2015
proxy: proxy.rcub.bg.ac.rs, port: 8080
- Eduroam network:
<http://www.eduroam.amres.ac.rs/rs/korisnici.html> or
<https://cat.eduroam.org>, click eduroam user, select your eduroam installer, choose the Serbian Academy of Science and Arts and click all platforms

Conference organized by:

- Institute of Physics Belgrade
- Faculty of Physics, University of Belgrade
- Vinča Institute of Nuclear Sciences
- Serbian Academy of Sciences and Arts

Financial support: Ministry of Education, Science and Technological Development of Republic of Serbia

The 19th Symposium on Condensed Matter Physics (SFKM2015) 7-11 September 2015, Belgrade, Serbia

Conference Program

Monday, 7 September 2015, Main hall, 2nd floor

8:30-9:00 **Conference Opening**

Superconductivity – Frontiers

Session Chairs: Christoph Bruder, Marco Aprili, Zoran Radović and Mihajlo Vanević

9:00-9:45	Ivan Božović	The Origin of High-Tc Superconductivity in Cuprates
9:45-10:10	Čedomir Petrović	Superconducting and Normal States in Iron Chalcogenides
10:10-10:35	Emil S. Božin	Evolution of Orthogonally Inequivalent States in Cuprates - Atomic Structure Footprints
Coffee Break		
10:50-11:15	Dragana Popović	Quantum Criticality and Far-from-Equilibrium Dynamics in Strongly Correlated (Quasi-) Two-Dimensional Electron Systems
11:15-11:40	Stevan Nadj-Perge	Majorana Fermions in Ferromagnetic Atomic Chains on a Superconductor
11:40-12:05	Milorad Milošević	Emergent Phenomena in Multigap Superconductors
12:05-12:30	Nenad Lazarević	Raman Scattering in Iron-Based Superconductors and Related Materials

Superconducting Devices and Quantum Transport

Session Chairs: **Dragana Popović and Čedomir Petrović**

14:30-14:55	Marco Aprili	Spin Injection and Relaxation in a Mesoscopic Superconductor
14:55-15:20	Christoph Bruder	Quantum Synchronization
15:20-15:45	Zoran Ivić	Coherent Optical Phenomena in Superconducting Metamaterials: Self-induced Transparency and Dicke Superradiance

Coffee Break

16:00-16:25	Zoran Radović	Long Range Spin-Triplet Proximity Effect in Ferromagnetic Bilayers
16:25-16:50	Wolfgang Belzig	Spin-Dependent Thermoelectric Effects and Spin-Triplet-Supercurrent in Mesoscopic Superconductors
16:50-17:15	Alexander Buzdin	The Emergence of Superconducting Spintronics
17:15-17:27	Zorica Popović	Quasiparticle Transport Properties of SFS and DFD Junctions

Coffee Break

Magnetism

Session Chairs: **Wolfgang Belzig and Zoran Ivić**

17:40-18:05	Milan Damnjanović	Symmetry in Classical Magnetism: Helical Phases in RKKY ^{13}C Nanotubes
18:05-18:30	Marjana Ležaić	Magnetism and Relativistic Effects in Functional Oxides
18:30-18:55	Djordje Spasojević	Spanning Avalanches as Extreme Events in Two-dimensional Random Field Ising Model
18:55-19:07	Ivica Bradarić	Magnetic Properties of $\text{Ca}(\text{Ru},\text{Ti})\text{O}_3$ System

Tuesday, 8 September 2015, Hall 2, 1st floor

Topological Insulators

Session Chairs: Igor Herbut and Alexander Buzdin

9:00-9:25	Branislav K. Nikolić	Spin-orbit Torques in Topological-insulator/ferromagnet Heterostructures
9:25-9:50	Vladimir Juričić	Space Group Classification of Topological Band Insulators
9:50-10:15	Ilija Zeljković	Interplay of Dirac Fermions and Structural Deformations in Topological Crystalline Insulators

Coffee Break

10:30-10:55	Predrag Nikolić	Kondo Topological Insulators
10:55-11:20	Edib Dobardžić	Generalized Bloch Theorem and Topological Characterization

Phase Ordering and Structural Ordering of Condensed Matter

Session Chair: Djordje Spasojević

11:20-11:45	Gyula Eres	Fundamental Building Blocks in Nanomaterial Synthesis by Pulsed Laser Vaporization
11:45-12:10	Nenad Švrakić	Size and Shape Control in the Synthesis of Nano-sized Particles

Surface, Interface and Low-dimensional Physics – Graphene, Nanotubes, Quantum Dots and Contacts, 2D Magnetism (Part I)

Session Chairs: Branislav Nikolić and Gyula Eres

14:30-14:55	Christian Teichert	Organic Thin Film Growth on Various Graphene Substrates
14:55-15:20	Velimir Radmilović	Functional Oxide Nanowires for Thermoelectric Applications
15:20-15:45	Nataša Bibić	Ion Beam Induced Modifications of Thin Films/Si bilayers

Coffee Break

16:00-16:25	Zorica Konstantinović	Resistive Switching Mechanism in Nanostructural Functional Oxides
16:25-16:50	Mirjana Grujić-Brojčin	Numerical Models in Analysis of Morphological Properties of Oxide Nanopowders
16:50-17:15	Aleksandar Matković	Spectroscopic and Scanning Probe Microscopic Investigations and Characterization of Graphene
17:15-17:27	Zoran Jakšić	Plasmonic Nanomembranes for Detection and Sensing
17:28-17:40	Bojana Višić	Optical Properties of WS ₂ Nanotubes and their Decoration with Au and Pd Nanoparticles
17:40-18:05	Dimitrije Stepanenko	Spin-electric Coupling in Molecular Magnets

18:10-20:10

Poster Session

Session Chairs: Antun Balaz, Nenad Vukmirović and Mihajlo Vanević

Wednesday, 9 September 2015, Hall 2, 1st floor

Surface, Interface and Low-dimensional Physics – Graphene, Nanotubes, Quantum Dots and Contacts, 2D Magnetism (Part II)

Session Chair: Bosiljka Tadić

9:00-9:25	Ivanka Milošević	Potential of Helically Coiled Carbon Nanotubes for Sensing Applications
9:25-9:50	Zoran Mišković	Modeling Graphene Interactions with Electrolyte
9:50-10:15	Emmanuele Cappelluti	Strain Engineering in Two-Dimensional Transition-Metal Dichalcogenides
10:15-10:40	Mihajlo Vanević	Electron and Electron-hole Wave Functions in a Driven Quantum Contact
10:40-10:52	Sonja Predin	The Effect of the Trigonal Warping on the Energy and the Entanglement Spectrum of Graphene Bilayers

Coffee Break

Statistical Physics of Complex Systems

Session Chair: Igor Kulić

11:10-11:35	Leonardo Golubović	Classical and Statistical Mechanics of Celestial Scale Strings: Rotating Space Elevators
11:35-12:00	Bosiljka Tadić	Structure of Noise in Complex Systems Revealed by Multifractal and Graph-Theory Techniques
12:00-12:25	Milan Rajković	Quantifying Self-organization and Complexity in Complex Systems
12:25-12:50	Marija Mitrović Dankulov	Quantitative Study and Modeling of Collective Knowledge Building via Questions and Answers
12:50-13:02	Igor Franović	Mean-field Dynamics of Systems of Delay-coupled Noisy Excitable Units
14:30-20:00	Conference Excursion to Viminacium. The buses depart from Studentski trg (see the map)	

Thursday, 10 September 2015, Hall 2, 1st floor

Surface, Interface and Low-dimensional Physics – Graphene, Nanotubes, Quantum Dots and Contacts, 2D Magnetism (Part III)

Session Chairs: Emmanuele Cappelluti and Zoran Ikonić

9:00-9:45	Harald Brune	Probing and Engineering of Quantum Magnets at Surfaces
9:45-10:10	Željko Šljivančanin	Defect-Induced Magnetism in Graphene
10:10-10:35	Bjørk Hammer	Intercalation of Metal Supported Graphene
10:35-11:00	Milan Tadić	Magnetotransport Properties of Graphene van der Waals Heterostructures

Coffee Break

Semiconductor Physics

Session Chair: Nenad Vukmirović

11:15-11:40	Stergios Logothetidis	Organic and Printed Photovoltaics: Process and In-line Optical Monitoring
11:40-12:05	Zoran Ikonić	SiGeSn Alloys for Silicon-Based Photonics
12:05-12:17	Nikola Prodanović	Equilibrium Charge Transport in Nanocrystal Solids: Polaron Effects
12:18-12:30	Marko Mladenović	Electronic States at the Interface Between Crystalline and Amorphous Domains in Conjugated Polymers
12:30-12:42	Stevan Jankov	Electrical Conductivity of Nanocrystalline Y-doped Nickel Ferrites
12:43-12:55	Marko Rančić	Electric Dipole Spin Resonance in the Presence of Valley Degeneracy

Condensed Matter out of Equilibrium

Session Chair: Ivana Vasić

12:55-13:20	Stefano Baroni	What I Cannot Compute I Do not Understand: Fathoming Atomic Heat Transport from the Struggle to Simulate it
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Soft and Biological Matter
Session Chair: Leonardo Golubović

15:00-15:25	Jane Kondev	How to Build a Proportional Cell
15:25-15:50	Miljko Satarić	Dissipative Solitons in Cellular Microtubules
15:50-16:15	Igor Kulić	Soft Confotronics
Coffee Break		
16:25-16:50	Rastko Sknepnek	Flocks on a Sphere: Effects of Curvature on Active Collective Motion
16:50-17:02	Miloš Knežević	Light-responsive Liquid-crystal Elastomers for Solar Energy Harvesting
20:00	Conference Dinner (Klub književnika, Francuska 7)	Presentation of SFKM Charter to Ljiljana Dobrosavljević-Grujić, Sava Milošević and Bratislav Tošić

Friday, 11 September 2015, Hall 2, 1st floor

Cold Atoms

Session Chair: Antun Balaž

9:00-9:25	Vladan Vuletić	Entanglement of 3000 Atoms by One Photon
9:25-9:50	Hrvoje Buljan	Synthetic Magnetic Fields for Atoms and Photons
9:50-10:15	Ivana Vasić	Bosonic Phases on the Haldane Honeycomb Lattice
10:15-10:28	Jovana Petrović	Sensitivity of a Multi-State Atom Interferometer

Coffee Break

Strongly Correlated Systems

Session Chairs: Vladan Vuletić and Hrvoje Buljan

10:40-11:05	Igor Herbut	Non-Fermi Liquids and (Mott) Insulators in Electronic Systems with Quadratic Band Touching
11:05-11:30	Balázs Dóra	From Floquet to Dicke: Quantum Spin-Hall Insulator in Quantized Electromagnetic Field
11:30-11:55	Fakher Assaad	Entanglement Spectra of Interacting Fermions From Quantum Monte Carlo Simulations

Coffee Break

12:10-12:35	Milica Milovanović	The Quantum Hall Bilayer at Intermediate Distances
12:35-13:00	Darko Tanasković	Mott Quantum Criticality and Bad Metal Behavior
13:00-13:12	Francesco Parisen Toldin	Fermionic Quantum Criticality in Honeycomb and π -flux Hubbard Models

Conference adjourns

Posters (Tuesday Evening)

- Poster 1:** Phenomenology of Charge-Regulation Interaction in the Protein World
Nataša Adžić
- Poster 2:** Transport Properties of Graphene Bilayer on Substrate from Exact Electronic Green's Function
Dalibor Čevizović
- Poster 3:** Symmetry Based Analysis of Gap Plasmons in Fishnet Metamaterials
Vladimir Damljanović
- Poster 4:** Theoretical and Experimental Study of Helices Composed of Spherical Dipoles
Miljan Dašić
- Poster 5:** Analyte Recognition and Quantification Based on Fluctuation Phenomena on the Active Surface of Biochemical Sensors
Zoran Djurić
- Poster 6:** Surface Hypermodes in Photonic Hypercrystals
Goran Isić
- Poster 7:** Nonequilibrium High-frequency Conductivity in Materials with Localized Electronic States
Veljko Janković
- Poster 8:** Stroboscopic Phenomena in Superconductors with Dynamic Pinning Landscape
Željko L. Jelić
- Poster 9:** Mott-insulator to Superfluid Transition by Multiple Bound Dark-state Polaritons in Jayne's Cummings-Hubbard Lattices
Angelo Maggitti
- Poster 10:** Probing the Plasmon-Phonon Hybridization in Supported Graphene by Externally Moving Charged Particles
Tijana Marinković
- Poster 11:** A Theoretical Study on the 60K Plateau in $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ Superconductor
Vladimir M. Matic
- Poster 12:** Chemical Doping of Langmuir-Blodgett Assembled Graphene Films for Flexible Transparent Conductive Electrodes
Aleksandar Matković
- Poster 14:** Optically Generated Nonlinear Temperature Variations on Sample Surfaces
Mioljub Nešić
- Poster 15:** Nonlocal Effects in Periodic Plasmonic Nanostructures with Deep Subwavelength Perturbations
Marko Obradov
- Poster 16:** New Ordered Magnetic Phase in Frustrated Spin-1/2 Heisenberg Antiferromagnet in RPA
Milica Pavkov-Hrvojević

- Poster 17:** Oscillator Strengths in an Off-Center Spherically Confined Hydrogen Atom
Vladan Pavlović
- Poster 18:** Density Functional Theory Study of Li and Ti-Intercalated Graphene
Jelena Pešić
- Poster 19:** Fano Resonances in the Conductance of Graphene Nanoribbons with Side Gates
Marko D. Petrović
- Poster 20:** Electro-acoustic Analogy of an Open, Minimum Volume, Photoacoustic Cell
Marica Popović
- Poster 21:** Charge Density Wave in CeTe₃ – A Scanning Tunneling Microscopy Study
Uroš Ralević
- Poster 22:** Conference Attendance Patterns
Jelena Smiljanić
- Poster 23:** Specifics in Optical Properties of Molecular Crystalline Nanofilms
Igor J. Šetrajić
- Poster 24:** Electrical and Mechanical Properties of CVD Graphene Studied by Scanning Probe Microscopy
Borislav Vasić
- Poster 25:** Collective Modes of Dipolar Fermi Gas from Collisionless to Hydrodynamic Regime
Vladimir Veljić
- Poster 26:** Faraday Waves in Dipolar Bose-Einstein Condensates
Dušan Vudragović
- Poster 27:** Simulations of Optical Properties of III-Nitride Quantum Dots and Nanowires
Nenad Vukmirović

Post-deadline Posters (Tuesday Evening)

- Poster 28:** Enhanced Performance of Organic Solar Cells with the Addition of Molecular Mo₆S_{9-x}I_x Nanowires and Factors Determining it
Nevena Čelić
- Poster 29:** Quantum Transport Through Molecular Magnets
Milena Filipović

Map of important locations

