VORTEX2017

16th International Workshop on Vortex Matter in Superconductors
May 28th to June 3rd, 2017
www.vortex2017.org - vortex2017@iip.ufrn.br

Session A - Monday morning - chairman Hai-Hu Wen

- 08h30-08h55 **Hermann Suderow**
  Scanning tunneling microscopy of vortices in tilted magnetic fields

- 08h55-09h20 **Marcin Konczykowski**
  Vortex matter close to the crossover between antiferromagnetic and paramagnetic ground states in iron-based superconductor

- 09h20-09h45 **Hugo Keller**
  Probing superconductity and magnetism in unconventional superconductors with positive muons

- 09h45-10h10 **Kazuo Kadowaki**
  Terahertz Emission from High-Tc Superconductor Bi2212 Mesa Structures with Higher Symmetry

Session B - Monday morning - chairman Hermann Suderow

- 10h30-10h55 **Xiao Hu**
  Landau-Zener-Stückelberg interferometry for Majorana qubits

- 10h55-11h20 **Katsuya Iwaya**
  Superconducting states in the topological surface state of β-$PdBi_2$

- 11h20-11h45 **Yoshihiro Iwasa**
  Quantum Phase Transitions in Gate-Induced 2D Superconductors

- 11h45-12h10 **Lia Krusin**
  Mesoscopic Josephson networks on topological surfaces

- 12h10-12h35 **Hai-Hu Wen**
  Search for Topological Superconductivity in $Sr_xBi_2Se_3$ and Pressure Induced Superconductivity in Weyl Semimetal TaP

- 12h35-13h00 **Yuki Nagai**
  Time-reversal symmetry breaking phase, gapped surface states, and vortex-antivortex pairs in d-wave nanoislands

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Session C - Monday afternoon - chairman Marcin Konczykowski

- 14h30-14h55 **Yakov Kopelevich**
  Universal metal-insulator-like transition and topologically-protected states

- 14h55-15h20 **Valerii Vinokur**
  Critical behavior at the vortex Mott transition

- 15h20-15h45 **Tatyana Baturina**
  Charge Berezinskii-Kosterlitz-Thouless transition in superconducting NbTiN films

- 15h45-16h10 **Beena Kalisky**
  Mapping superfluid density near the superconductor insulator phase transition

- 16h10-16h35 **Clecio Souza-Silva**
  Conformal Vortex Crystals

- 16h35-17h00 **Cynthia Reichhardt**
  Hyperuniformity in Vortex Systems

Session D - Monday evening - chairman Yakov Kopelevich

- 17h30-17h55 **Alexei Koshelev**

Strong Landau-quantization effects in high-magnetic-field superconductivity of clean two-dimensional metals with deep and shallow bands

- 17h55-18h20 **Ivan Sadovskyy**

Targeted Pinscape Evolution in Superconductors for Optimal Critical Current

- 18h20-18h45 **Roberto Luccas**

Pinning force estimation method based on a vortex position analysis

- 18h45-19h10 ***Oral Posters***
- 19h10-19h35 ***Oral Posters***

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Session E - Tuesday morning - chairman François Peeters

- 10h30-10h55 **Eli Zeldov**
  Scanning SQUID-on-tip nanomagnetometry and nanothermometry of quantum systems

- 10h55-11h20 **Isabel Guillámon**
  Scanning tunneling microscopy studies of the vortex lattice in pnictide superconductors

- 11h20-11h45 **Yanwei Ma**
  Vortex pinning and relaxation in high-J_c 122 type pnictide superconducting tapes

- 11h45-12h10 **Anatolii Polyanskii**
  Magneto-optical study of grain boundary transparency in thin Yb(Ca)-123 bi-crystal films managed by heat treatment in oxygen atmosphere.

- 12h10-12h35 **Leonardo Cabral**
  Theoretical Investigation of Two Vortex Shells Dinamics in Superconducting Disk in the Corbino GeometryPinning-Free

Session F - Tuesday afternoon - chairman Eli Zeldov

- 14h30-14h55 **Joris Von de Vondel**
  Direct observation of condensate and vortex confinement in nanostructured superconductors using STM

- 14h55-15h20 **Oscar de Lima**
  Type-II Superconductivity in Arrays of Nanostructured β-Gallium

- 15h20-15h45 **Tsuyoshi Tamegai**
  Anomalous Peak Effect in (Ba,K)Fe_2As_2 with Splayed Columnar Defects

- 15h45-16h10 **Boldizsar Janko**
  Reconfigurable ordering, frustration and stability of vortex matter via network science

- 16h10-16h35 **François Peeters**
  Flux dynamics of type I superconductors

- 16h35-17h00 **Arkady Shanenko**
  Between types I and II: Intertype vortex patterns in thin superconductors

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Session G - Tuesday evening - chairman Arkady Shanenko

- 17h30-17h55 **Stefano Gariglio**
  Superconducting properties of $LaAlO_3/SrTiO_3$ interfaces in magnetic fields

- 17h55-18h20 **Tsutomu Nojima**
  Interfacial effect on high-Tc superconductivity in FeSe electric double layer transistors

- 18h20-18h45 **Mauro Doria**
  Lifshitz transition in an electronic layer and the condensate of zero helicity states

- 18h45-19h10 ***Oral Posters***
- 19h10-19h35 ***Oral Posters***

Session H - Wednesday afternoon - chairman Milorad Milošević

- 14h30-14h55 **Bagnato**
  Quantum Turbulence in a Bose-Condensate: a tangle vortices configuration

- 14h55-15h20 **Shigeru Kasahara**
  Quasiparticle excitations of FeSe in the vicinity of the BCS-BEC crossover

- 15h20-15h45 **Francisco dos Santos**
  Dynamics of quantum vortices in Bose-Einstein condensates

- 15h45-16h10 **Gustavo Telles**
  Dynamical decay of quadruply quantized vortices in a Bose-Einstein condensate

- 16h10-16h35 **Luca Salasnich**
  Vortices and antivortices in two-dimensional ultracold Fermi gases

- 16h35-17h00 **Lev Bulaevskii**
  Interference of antiferromagnetic ordering and superconductivity

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Session I - Wednesday evening - chairman Gianni Blatter

- 17h30-17h55 **Milorad Milosevic**
  Superconductivity in atomically thin MgB_2

- 17h55-18h20 **Ivan Maggio-Aprile**
  d-wave vortex cores revealed by Scanning Tunneling Spectroscopy of $YBa_2Cu_3O_{7-\delta}$

- 18h20-18h45 **Christophe Berthod**
  How disorder in the vortex positions changes the local density of states inside vortex cores: a real-space approach to Bogoliubov-de Gennes equations

- 18h45-19h10 **Tadashi Machida**
  Effect of magnetic field on electronic superstructures in cuprate superconductors

- 19h10-19h35 **Mauricio Coutinho-Filho**
  Magnetism and superconductivity: topology and quantum fluctuation effects

Session J - Thursday morning - chairman Jose Vicent

- 10h30-10h55 **Anna Palau**
  Reversible tuning of spin textures and resistance states in High Temperature Superconducting films

- 10h55-11h20 **Ulrich Welp**
  Reconfigurable Vortex Pinning with Magnetic Charge Ice

- 11h20-11h45 **Edgar Patiño**
  Vortex dynamics in superconductor/ferrromagnet hybrids

- 11h45-12h10 **Paulo Pureur**
  Spin texture on top of flux avalanches in $Nb/Al_2O_3/Co$ thin film heterostructures

- 12h10-12h35 **Vitalii Vlasko-Vlasov**
  Magnetic guides and gates for Abrikosov vortices

- 12h35-13h00 **Gorky Shaw**
  A novel approach towards manipulation of vortex matter in a superconductor with micromagnetic structures

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Session K - Thursday afternoon - chairman Dimitri Roditchev

- 14h30-14h55 **Alexander Gurevich**
  Generation of vortex-antivortex pairs by moving vortices and a dynamic phase slip transition in long Josephson junctions.

- 14h55-15h20 **Jose Vicent**
  Vortices on the move: Probing nanomagnets with different magnetic states

- 15h20-15h45 **Richard Klemm**
  Coherent emission from the intrinsic Josephson junctions in thermally-managed, high-symmetry $Bi_2Sr_2CaCu_2O_{8+\delta}$ devices

- 15h45-16h10 **Alejandro Silhanek**
  Superconducting weak links created by electromigration

- 16h10-16h35 **Yosi Yeshurun**
  Current-induced SQUID behavior of superconducting Nb nano-rings

- 16h35-17h00 **Enzo Granato**
  Superconductor-insulator transition in nanohole thin films with bond and magnetic flux disorder

Session L - Thursday evening - chairman Vadim Geshkenbein

- 17h30-17h55 **Dimitri Roditchev**
  Coherent quantum phenomena in superconducting atomic monolayers Pb/Si(111): A STM study

- 17h55-18h20 **Charles Reichhardt**
  Dynamic Phases and Hall Effect for Driven Skyrmion Lattices

- 18h20-18h45 **Jonathan White**
  Room temperature skyrmions and robust metastable skyrmion states in Co-Zn-Mn alloys

- 18h45-19h10 **Dionisio Bazeia**
  Topological Excitations in Planar Systems

- 19h10-19h35 **Morten Eskildsen**
  Direct Evidence for an Internal Degree of Freedom and Broken Time Reversal Symmetry in the B-phase of UPt_3

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Session M - Friday morning - chairman Satyajit Banerjee

- 10h30-10h55 **Leonardo Civale**
  Understanding and manipulating vortex creep in superconductors

- 10h55-11h20 **Vadim Geshkenbein**
  Vortex in the maze

- 11h20-11h45 **Gabriela Pasquini**
  Hysteretic effective pinning and vortex lattice reordering near the order-disorder transition: An interplay between plastic and elastic energy barriers?

- 11h45-12h10 **Martin Buchacek**
  Thermal creep of vortices within strong pinning theory

- 12h10-12h35 **Fabiano Colauto**
  Crossing fields in thin films of isotropic superconductors

- 12h35-13h00 **Roland Willa**
  Appearance of flux creep upon cooling anisotropic superconductors in tilted magnetic fields

Session N - Friday afternoon - chairman Alejandro Silhanek

- 14h30-14h55 **Yonathan Anahory**
  Imaging of super-fast dynamics and flow instabilities of superconducting vortices

- 14h55-15h20 **Yanina Fasano**
  Enhancement of penetration field due to surface Andreev bound states in vortex nanocrystals of $Bi_2Sr_2CaCu_2O_{8-\delta}$

- 15h20-15h45 **Jun-Yi Ge**
  Nanoscale assembly of superconducting vortices with scanning tunnelling microscope tip

- 15h45-16h10 **Maycon Motta**
  Magnetic Imaging of AC Susceptibility in Superconducting Thin Films

- 16h10-16h35 **Satyajit Banerjee**
  Evidence of superconducting and magnetic fluctuations both above and below Tc in $BaFe_{2-x}Co_xAs_2$ *single crystals*

- 16h35-17h00 **Pratap Raychaudhuri**
  Magnetic field induced emergent inhomogeneity in a superconducting film with weak and homogeneous disorder

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Session O - Friday evening - chairman Wilson Ortiz

- 17h30-17h55 **Herman Freire**
  Transport properties and new emergent phases in the cuprate superconductors

- 17h55-18h20 **Carsten Ederlein**
  Anti-Lenz Supercurrents in Superconducting Spin Valves

- 18h20-18h45
  Closing Session