

## Detailed Program

**(All times below are India Time)**

**Time conversion for some time zones indicated at the end of the table\*. Please convert the times shown in Indian time to your time.**

Day 1: 27 <sup>th</sup> May, 2021, Thursday	
16:25 - 16:55	Inauguration
	Inaugural remarks
	Address by Director IIT Kanpur, Prof. Abhay Karandikar
	Session: Vortex imaging/Pairing symmetry and Vortices <u>Chair:</u> Gianni Blatter , ETH Zurich, Switzerland <u>Co-Chair:</u> Gorky Shaw, KIIT Orissa, India
17:00 - 17:30	Tetsuo Hanaguri, RIKEN, Japan  Title: High-field superconducting phase in FeSe investigated by spectroscopic-imaging scanning tunneling microscopy
17:30 - 18:00	Hermann Suderow, IFIMAC, Universidad Autónoma de Madrid, Spain  Title: Scanning tunnelling microscopy of bound states in superconductors
18:00 - 18:30	Dimitri Roditchev, Sorbonne University, France  Title: Crossover from ferromagnetic superconductor to superconducting ferromagnet in p-doped $\text{EuFe}_2(\text{AsP})_2$
18:30 - 19:00	Simon Bending, University of Bath, United Kingdom  Title: Imaging the Suppression of Superconductivity by Correlated Magnetic Fluctuations in $\text{RbEuFe}_4\text{As}_4$
19:00 - 19:30	Break
	Session: Multigap superconductors, disorder: effect on order parameter symmetry/ phase diagrams/pinning/ applications <u>Chair:</u> T. V. Ramakrishnan, IISc Bangalore <u>Co-Chair:</u> Deepshikha Jaiswal Nagar, IISER Thiruvananthapuram, India
19:30 - 20:00	Marcin Konczykowski, Laboratoire des Solides Irradiés, Institut Polytechnique de Paris, France  Title: Tuning of Composition - Temperature Phase Diagram of Iron-Based Superconductors by Disorder
20:00 - 20:30	Vadim Geshkenbein, Affiliation Institut for Theoretical Physics ETH Zürich, Switzerland  Title: Creep effects on the Campbell response in type II superconductors
20:30 - 21:00	David Larbalestier, National High Magnetic Field Laboratory, Florida State University, USA  Title: Mysteries of Vortex Pinning in $\text{Nb}_{47}\text{wt.}\% \text{Ti}$

21:00 - 21:30	Morten Ring Eskildsen, University of Notre Dame, Notre Dame, USA  Title: Localized and reversible ordering and disordering of the vortex lattice in $UPt_3$
21:30 - 22:00	Ruslan Prozorov, Ames Laboratory, Iowa State University, USA  Title: Temperature-dependent anisotropy of London penetration depth in single- and two-band superconductors
Day 2: 28 <sup>th</sup> May, 2021, Friday	
16:00 – 16:50	Poster Session
	Session: Soft matter systems, skyrmions - connections with vortex physics <u>Chair:</u> Arghya Taraphdar, IIT Kharagpur, India.
17:00 - 17:30	Ajay Sood, Indian Institute of Science, Bangalore, India  Title: New Paradigms in Driven Soft Matter: Instabilities, Rheo-chaos, Memory encoding and retrieval
17:30 - 18:00	Pietro Tierno, Universitat de Barcelona, Spain  Title: Collective dynamics of driven colloids on ordered and disordered magnetic landscapes
18:00 – 18:30	Christos Panagopoulos, Nanyang Technological University, Singapore  Title: Coupling Topological Solitons in Hybrid Quantum Materials
18:30 - 19:00	Charles Reichhardt, Los Alamos National Laboratory, New Mexico, USA  Title: Vortex and skyrmion dynamics on moire superlattices
19:00 - 19:30	Break
	Driving Vortices in bulk/nano/heterostructures/hybrids <u>Chair:</u> Subroto Mukerjee, IISc Bangalore, India
19:30 - 20:00	Oleksandr Dobrovolskiy, University of Vienna, Austria  Title: Microwave stimulation of superconductivity in the vortex state
20:00 - 20:30	Ankit Kumar, Indian Institute of Technology, Kanpur, India  Title: Imaging the drive current effect on the low-field vortex melting phenomenon in a $Ba_{0.6}K_{0.4}Fe_2As_2$ superconductor
20:30 - 21:00	Ulrich Welp, Argonne National Laboratory, Argonne, USA  Title: Superconductivity and Magnetism in $RbEuFe_4As_4$
21:00 - 21:30	Alex Gurevich, Old Dominion University, Norfolk, USA  Title: Nonlinear dynamics of a vortex driven by a strong ac Meissner current
21:30 - 22:30	Poster session

Day 3: 29 <sup>th</sup> May, 2021, Saturday	
16:00 – 16:50	Poster Session
	Session: Superconductivity / Vortices in 2D systems, HTSC and interfaces <u>Chair:</u> Hermann Suderow, IFIMAC, Universidad Autónoma de Madrid Spain <u>Co-Chair:</u> Ajay Thakur, IIT Patna, India
17:00 - 17:30	Koichiro Ienaga, Tokyo Institute of Technology, Japan  Title: Quantum criticality in the field-induced metallic state of disordered superconducting thin films probed by thermoelectric effects
17:30 - 18:00	Hemanta Kumar Kundu, Indian Institute of Science, Bangalore, India  Title: Effect of dimensionality on vortex dynamics in type-II superconductor
18:00 - 18:30	Alexander Buzdin, Université de Bordeaux and CNRS, France  Title: Spontaneous currents and vortex generation via the spin-orbit mechanism at S/F interfaces
18:30 - 19:00	Mandar M Deshmukh, TIFR, Mumbai, India  Title: Tuning and modification of superconductivity in a 2d high TC superconductor $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$
19:00 - 19:30	Break
	Session: Topological superconductors/ hybrids (FM-SC) <u>Chair:</u> Prof. C. V. Tomy, IIT Bombay, India. <u>Co-Chair:</u> Surjeet Singh, IISER Pune, India
19:30 - 20:00	Tomasz Cichorek, Institute of Low Temperature and Structure Research, Poland  Title: Destruction of a sign-changing order parameter by artificial atomic defects in multiband superconductor $\text{PrOs}_4\text{Sb}_{12}$
20:00 - 20:30	Irina V. Grigorieva, University of Manchester, UK  Title: Magnetization signature of topological surface states in a non-symmorphic superconductor
20:30 - 21:00	Alexei E. Koshelev, Argonne National Laboratory, Illinois, USA  Title: Influence of correlated magnetic fluctuations on parameters of magnetic superconductors
21:00 - 21:30	Valerii Vinokur, Terra Quantum AG, Switzerland  Title: Topological nature of high temperature superconductivity
21:30 - 22:30	Poster session
Day 4, 30 <sup>th</sup> May, 2021, Sunday	
<b>No Sessions on this Day – Full day BREAK</b>	

Day 5 31 <sup>st</sup> May, 2021, Monday	
16:00 – 16:50	Poster Session
	Session: Novel superconducting devices / Structures/ applications Chair: Wilson Ortiz, Universidade Federal de São Carlos, Brazil Co-Chair: Pallavi Kushwaha, NPL New Delhi, India
17:00 - 17:30	Yosi Yeshurun, Bar-Ilan University, Israel  Title: DNA-assembled superconducting nanoscale architectures
17:30 - 18:00	R. Vijayaraghavan, Tata Institute of Fundamental Research, Mumbai, India  Title: Long-range connectivity in superconducting qubits using a ring resonator
18:00 - 18:30	Alejandro Silhanek, Université de Liège, Belgium  Title: Direct Visualization of Current-Stimulated Oxygen Migration in YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-δ</sub> Thin Films
18:30 - 19:00	Javier Villegas, Université Paris-Saclay, Palaiseau, France  Title: Revisiting photodoping, photoconductivity and photo - superconductivity in the cuprates
19:00 - 19:30	Break
	Session: Josephson Junctions / THz / Applications Chair: Milorad Milosovic, University of Antwerp, Belgium Co-Chair: Prof. Neeraj Khare, IIT Delhi, New Delhi, India
19:30 - 20:00	Joris Van de Vondel, KU Leuven, Belgium  Title: Giant fractional Shapiro steps in anisotropic Josephson junction arrays
20:00 - 20:30	Vladimir Krasnov, Stockholm University, Sweden  Title: Vortex-based Electronics
20:30 - 21:00	N. Peter Armitage, The Johns Hopkins University, Baltimore, USA  Title: Nonlinear THz electrodynamics of unconventional and disordered superconductors
21:00 - 21:30	Valentine Novosad, Argonne National Laboratory, Lemont, USA  Title: Superconducting sensors: From basic physics to large scale science experiments
21:30 – 22:00	Vasily Stolyarov, Moscow Institute of Physics and Technology, Dolgoprudny, Russia  Title: Low dissipative Josephson vortex dynamics
22:00 - 22:30	Poster session

Day 6 1 <sup>st</sup> June 2021, Tuesday	
16:00 – 16:50	Poster Session
	Session: Vortex imaging/Pairing symmetry/Vortices in New systems Chair: Vladimir Krasanov, Stockholm University, Sweden Co-Chair: Dilip Pal, IIT Guwahati, India
17:00 - 17:30	Hai Hu Wen, Nanjing University, China  Title: Vortex and its bound states in a layered superconductor $KCa_2Fe_4As_4F_2$
17:30 - 18:00	Beena Kalisky, Bar-Ilan University, Ramat-Gan, Israel  Title: Imaging the magnetic landscape in chiral superconductor candidate $4Hb-TaS_2$
18:00 - 18:30	Yanina Fasano, Centro Atómico Bariloche, Argentina  Title: Non-gaussian tail in the force distribution: A hallmark of correlated disorder in the host media of elastic objects
18:30 - 19:00	Surajit Dutta, TIFR, Mumbai, India  Title: Observation of two-dimensional melting and zero-point fluctuation of vortices in a very weakly pinned a-MoGe thin film
19:00 - 19:30	Break
	Session: Superconductivity in 2D materials/HTSC and interfaces Chair: Marcin Konczykowski, Institut Polytechnique de Paris, France Co-Chair: Pallavi Kushwaha, NPL, New Delhi India
19:30 - 20:00	Philip Kim, Harvard University, Cambridge, USA  Title: Toward realization of novel superconductivity based on twisted van der Waals Josephson junction in cuprates
20:00 - 20:30	Floriana Lombardi, Chalmers University of Technology, Sweden  Title: Reshaping the phase diagram of HTSC by nm thin films and nanodevices
20:30 - 21:00	Goutam Sheet, Indian Institute of Science Education and Research, Mohali, India  Title: Tip-induced superconductivity
21:00 - 21:30	Maria Iavarone, Temple University, Philadelphia, USA  Title: Proximity induced superconductivity in monolayer $MoS_2$
21:30 - 22:30	Poster session

Day 7 2 <sup>nd</sup> June 2021, Wednesday	
16:00 – 16:50	Poster Session
	Session: Vortex Pinning/ Vortex Dynamics/ Fluctuations/ Applications Chair: Mauro Doria, Universidade de Federal do Rio de Janeiro, Brazil Co-Chair: Prof. Anjan Gupta, IIT Kanpur, India
17:00 - 17:30	Atsutaka Maeda, University of Tokyo, Japan  Title: Large Hall angle in the flux flow of high-T <sub>c</sub> cuprate superconductors measured by microwave Hall effect
17:30 - 18:00	Tsuyoshi Tamegai, The University of Tokyo, Japan  Title: Impacts of defects on the peak effect in NbSe <sub>2</sub>
18:00 - 18:30	Wilson Ortiz, Universidade Federal de São Carlos, Brazil  Title: Recording magnetic flux in the mixed state of superconducting thin films
18:30 - 19:00	Lara Benfatto, University of Rome, Rome, Italy  Title: Dynamical signatures of a fragile glass transition in thin superconducting films
19:00 - 20:00	Sarod Concert: Indian Classical Instrumental Music program (19:00 - 19:45) Shri. Debanjan Bhattacharjee <a href="http://www.DebanjanBhattacharjee.com">www.DebanjanBhattacharjee.com</a>
	Session: Superconductivity and 2D Quantum Materials-Synergy Chair: Arindam Ghosh, IISc Bangalore, India
20:00 - 20:30	Pablo Jarillo – Herrero, MIT, Cambridge, USA  Title: Moiré Magic 3.0
20:30 – 21:00	Dmitri Efetov, ICFO, Barcelona, Spain  Title: Competing phases of correlated Chern insulators in Superconducting Twisted Bilayer Graphene
21:00 - 21:30	Sameer Grover, Weizmann Institute of Science, Rehovot, Israel  Title: SQUID-on-tip imaging of topological currents in magic-angle graphene
21:30 - 22:00	Anindya Das, Indian Institute of Science, Bangalore, India  Title: Dynamics of Andreev edge state at the interface of quantum Hall and superconductor
22:00 - 22:30	Poster Session

Day 8 3 <sup>rd</sup> June, 2021, Thursday	
16:25 - 16:40	Address by Director TIFR, Prof. S. Ramakrishnan
	Session: Vortex phase diagram, Multi-component superconductivity and connections with Vortex matter vs. pairing symmetry <u>Chair</u> : Atsutaka Maeda, University of Tokyo, Japan
17:00 - 17:30	Yoshihiro Iwasa, University of Tokyo, Japan  Title: Two-dimensional BCS-BEC crossover
17:30 - 18:00	Shigeru Kasahara, Research Institute for Interdisciplinary Science, Okayama University, Japan  Title: Fulde-Ferrell-Larkin-Ovchinnikov States in the BCS-BEC-Crossover Superconductor FeSe
18:00 - 18:30	Ravi Prakash Singh, Indian Institute of Science Education and Research, Bhopal, India  Title: Time Reversal Symmetry Breaking in Noncentrosymmetric Superconductors
18:30 - 19:00	Leonardo Civale, Los Alamos National Laboratory, USA  Title: Using vortex dynamics tools to explore magnetic configurations in non-superconducting materials
19:00 - 19:30	Break
	Session: Statics and dynamics of Vortices in extreme confinement/Nanostructures/hybrids <u>Chair</u> : Arun K. Grover, India <u>Co-Char</u> : Ravi Prakash Singh, IISER, Bhopal, India
19:30 - 20:00	Milorad Milosevic, University of Antwerp, Belgium  Title: Advances in multiscale simulations of fluxonic devices
20:00 - 20:30	Vladimir M. Fomin, Institute for Integrative Nanosciences, Dresden, Germany  Title: Topological effects in advanced superconductor nanoarchitectures
20:30 - 21:00	Mauro M Doria, Universidade Federal do Rio de Janeiro, Brazil  Title: An unstable giant vortex in the mesoscopic type I superconductor - The spike state
21:00 - 21:30	Boldizar Janko, University of Notre Dame, Indiana, USA  Title: Superconducting Vortex Matter Under Extreme Confinement: The Effect of Anisotropic Interaction
	<b>Closing Remarks</b>
-----X-----X-----X-- Conference Ends --X-----X-----X-----	

**\*Conference time for your time zone**

Tokyo: 20:30 to 01:00 (IST + 3 hours 30 minutes)

Beijing : 19:30 - 00:00 (IST + 2 hours 30 mins)

India, IST: 17:00 to 21:30

UK : 12:30 to 17:00 (IST - 4 hour 30 minutes)  
Brussels: 13:30 to 18:00 (IST - 3 hours 30 mins)  
Paris: 13:30 to 18:00 (IST - 3 hours 30 mins)  
Sweden: 13:30 to 18:00 (IST - 3 hours 30 mins)  
Buenos Aires: 8:30 to 13:00 (IST - 8 hours 30 mins)  
Rio de Janerio: 8:30 to 13:00 (IST - 8 hours 30 mins)  
New York: 7:30 to 12:00 (IST - 9 hours 30 mins)  
Indianapolis:7:30 to 12:00 (IST - 9 hours 30 mins)  
Massachusetts:7:30 to 12:00 (IST - 9 hours 30 mins)  
Chicago : 6:30 to 11:00 (IST - 10 hours 30 mins.)  
Los Angeles/California: 4:30 to 9:00 (IST - 12 hours 30 mins)  
New Mexico: 5:30 - 10:00 (IST - 11 hours 30 mins)