



DPS day, CESSI @ 10

Academic Program



<https://cessi.iiserkol.ac.in/dpsdaycessi10/>

Date: 08/03/2024	Venue for academic program is M N Saha lecture hall	
4:00 - 4:30 PM	High Tea/Coffee	Title
4:30 - 5:30 PM	Inauguration Session Welcome address by Physics HoD [10 Min] Director's address [5 Min] CESSI@10 address by CESSI HoD [15 Min] International Women's Day facilitating our women staff	
Chair: Rajesh Nayak	(1) Durgesh Tripathi(IUCAA)[40 Min]	Sun through the Eyes of the Solar Ultraviolet Imaging Telescope
5:30 - 7:55 PM Chair: Dibyendu Nandi	First Session	
	(1) G.C. Anupama (IIA)[40 Min]	The Indian Astronomy Vision
	(2) Anjan Kuman NM[15 Min]	Probing Magnetic Dimensional Crossover in CrSiTe ₃
	(3) Ram Nandan Kumar[15 Min]	Probing Dual Asymmetric Transverse Spin Angular Momentum in Tightly Focused Vector Beams in Optical Tweezers
	(4) Jeeban Kumar Nayak[15 Min]	Fourier optical route towards quantitative multimodal differential microscopy
	(5) A.N. Ramaprakash[40 Min]	Innovative Instrument Concepts for Astronomy
	(6) Tousik Samui[15 Min]	

8:40 -	Dinner and Break for the day	
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Date: 09/03/2024 (And Posters)		
10:00 AM - 11:35 AM Chair: Sudip Kumar Garain	Morning Session	
	(1) Archana Pai(IIT B)[40 Min]	Gravitational Wave Astronomy
	(2) Tousik Samui[15 Min]	DPS HPC story!
	(3) Bhargav Vaidya(IIT Indore)[40 Min]	Space Plasmas: Theoretical and Modeling Perspectives
11:30 AM - 12:00 AM	Tea/Coffee Break	
12:00(Noon) - 01:25 PM Chair: Koushik Dutta	Morning Second Session	
	(1) Sankar Subramaniam, ISRO[40 Min]	AdityaL1 Mission
	(2) Shaonwita Pal[15]	Algebraic Quantification of the Sun's Dipole Moment: Applications to Polar Field Estimates and Solar Cycle Forecasting
	(3) Arkayan Laha[15 Min]	Substrate's Secret Language: A Closer Look at How Viscoelasticity Orchestrates Cell Deformation
	(4) Anita Pahi[15]	
1:25 PM - 2:30 PM	Group Photograph Lunch Break	
2:30 PM - 4:55 PM Chairs: Nirmalya Ghosh, Chiranjib Mitra	Felicitatation to Prof Prasanta Panigrahi	

	(1) <u>Arun Pati (TCG Crest)</u> [30 Min]	
	(2) Sk Rajiuddin [15 Min]	
	(3) Sudip Sinha [15 Min]	Impurities embedded in quasi-one-dimensional quantum droplets
	(4) Utpal Roy (IIT Patna)[30 Min]	Quantum & Atom Optics for Quantum Sensing
	(5) Saptarshi Saha [15 Min]	Prethermalization in Open Quantum Systems
4:55 PM - 6:00 PM	Tea/Coffee Break and poster session	
6:30 - 7:30	Cultural Programs	
	Special Dinner	

Date: 10/03/2024		
10:00 AM - 11:25 AM Chair Sudip	Morning Session	
	(1) Debajyoti Guha[15 Min]	Spectral Bifurcation Diagram
	(2) Paulami Majumder [15 Min]	Precession of the Gyroscope in the strong gravitational field of a static Black Hole and Naked Singularity
	(3) Dipankar Banerjee (ARIES)[40 Min]	Key Challenged in Solar Physics: An Observational Perspectives
	(4) Souradeep Pal[15 Min]	Tidal reconstruction of neutron star mergers from their late inspiral
11:30 AM - 12:00 (Noon)	Tea Break	
12:00 - 1:30 PM Chair: Ayan Banerjee	Last Session	
	(1) Souvik Roy[15 Min]	A 'CLASS'-ic, first-of-a-kind exploration of Space Weather of the full moon.
	(2) Amir Subba[15 Min]	probing new physics with polarizations and spin correlations

	(3) Soumya Ghosh[15 Min]	Low energy electron Collision with Molecules
	(4) Soumya Mukherjee[15 Min]	THz as a tool to probe magnetical topological insulator, MnBi ₂ Te ₄
1:30 PM -	Lunch and Disperse	

List of Posters

Sr No	Name	Title	Comments
1	Debajyoti Guha	Spectral Bifurcation Diagram	Soft matter
2	Ritwik Dhara	Detection of Joint Weak Value using optical beam shift	Optics
3	Medha Roy Choudhury	Dynamics in S-wave Superconductors	Cond mat
4	Abhirup Mukherjee	A new auxiliary model approach for fermionic systems	Cond mat
5	Amit Basak	Multichannel Games in Multiplex Network	Soft matter
6	Shinjini Das	Salt-dependent swelling kinetics of polyelectrolyte gels	Soft matter
7	Sarfraj md Juned Fency	Theoretical aspects of dynamical nuclear polarization	Cond Mat
8	Poulami Ghosh	Understanding Lead Free Halide Perovskite using THz Spectroscopy	Cond Mat
9	Saptarshi Saha	Prethermal discrete time-crystal in dissipative dipolar systems	Cond Mat
10	Anupama	Investigation of BSTS topological insulator using picosecond strain pulses.	Cond Mat
11	Debabrata Mondal	Ergodicity and scarring phenomenon in a dissipative Tavis-Cummings lattice	Cond mat
12	SOVAN GHOSH	Orbital Hall effect in bilayer Graphene	Cond mat
13	Anuvab Nandi	Pulsed ODMR in an ensemble of Nitrogen Vacancy Centers in Diamond	Cond Mat
14	Biswajit Das	Effects of hydrodynamic interaction on the irreversibility of a mesoscopic system	Soft matter
15	Sidhanta Sahu	Unveiling Nonlinear Optical Phenomena and Ultrafast Dynamics in Organic Semiconductor Systems	Optics

16	Debraj Debata	Kondo Effect : Battle between Entanglement & Symmetry Breaking	Cond Mat
17	Sourav Paul	Fractional Linear Map, Qubit Dynamics and the Leggett-Garg Inequality	Cond Mat
18	P.C Lalremruati	Impact of Love : Tidal love number and its influence on the pericentre shift of S-stars near Sgr A*	Astro-Particle
19	Shubhamay Panja	Prethermalization in dipolar-spin network	Cond Mat
20	Vibhu Arora	Carriers induced Phase Transition in WS ₂	Cond Mat
21	Santanu Tripathy	Resonant orbit for a spinning particle in Kerr Spacetime	Astro-particle
22	Subhadeep Chakraborty	Robust Majorana bound state in pseudo-spin domain wall of 2-D topological insulator	Cond Mat
23	Dheerendra Singh	Linear stability analysis in 1D spin orbit coupled Bose-Bose mixture.	Soft Matter
24	Souvik Chakraborty	Anisotropic Rashba effect in monolayer non-janus transition metal dichalcogenide alloys	Cond Mat
25	Amulya Ratnakar	Can Majorana zero modes survive Edge reconstruction?	Cond Mat
26	Sramana Das	Role of Tight Focusing in studying Spin Hall effect of light into Stratified medium in Optical Tweezers	Optics
27	Sowrabh Sudevan	Constructing sequentially encodeable pure quantum error correcting codes from graph states.	Cond Mat
28	Debismita Naik	Evidence of spin-phonon coupling in Ising spin-chain system α – CoV ₂ O ₆	Cond Mat
29	kanav sharma	1/f Noise in Pulsed Laser Deposition Grown (Bi _{0.3} Sb _{0.7}) ₂ Te ₃ Thin Film	Cond Mat
30	Dhananjaya Mahapatra	Harmonic Hall Measurement of Orbital Torque in lightmetal/ferromagnetic bilayers.	Cond Mat
31	Anisha Majhi	Optical manipulation of cell membrane in live cells for probing tension heterogeneity	Optics
32	Aabir Mukhopadhyay	Anomalous topology and synthetic flat band in multi-terminal Josephson Junctions	Cond Mat
33	Puspita Parui	Topological properties of alpha-t ₃ lattice	Cond Mat
34	Priyanka Sinha	Magnetotransport of twisted bilayer graphene in presence of external electric field	Cond Mat
35	Ayan Mondal	Pressure induced flatbands in large angle twisted bilayer graphene	Cond Mat
36	Sampurna Karmakar	Effect of current splitting property of the strong coupling fixed point	Cond Mat

37	Saikat Dutta	Effects of disorder on the dynamics of 2D melting	Cond Mat
38	Priyansh Jaswal	Discovery of a Relationship Between the Sun's Dipole Moment and the Sunspot Cycle	Astro Particle
39	Chitradeep Saha	Buoyant Emergence of Sunspots through Solar Convection Zone	Astro Particle
40	Beetehotra Roy	Application of URG in QED and Neutron Stars	Astro Particle
41	Titir Mukherjee	QUANTUM SOFT IMPACT OSCILLATOR: MACROSCOPIC ANALOGUE	Soft Matter
42	Yoshita Baruah	UTILIZING INNER HELIOSPHERIC IN-SITU OBSERVATIONS TO IMPROVE PREDICTION OF CME FLUX ROPE PROPERTIES NEAR EARTH	Astro Particle
43	Anand Dev Ranjan	Heterogeneous micropatterns of biologically active macromolecules using microbubble lithography	Soft matter
44	Gourab Das	Emergence of Spin-Path Entanglement & Collapse of Wavefunction in Stern-Gerlach Experiment	Cond Mat
45	Budhaditya Banerjee	Switching Gears : From Persistent Active to Brownian Passive	Soft Matter
46	KHURSID ALAM	Constraints on inflation from preheating	Astro Particle