



8:15-9:15	REGISTRATION: TTJ Auditorium, ICSR Building, IIT Madras	
9:15-9:35	INAUGURATION: Raghunathan Rengaswamy Dean Global Engagement, IIT Madras	
	TECHNICAL SESSION I, Chair: V Balakrishnan, (@TTJ)	
9:35-10:10	Deepak Dhar	An introduction to self organised criticality
10:10-10:45	Rajarshi Roy	Light in Sync: Photons, Randomness and Complexity
10:45-11:15	TEA	
	TECHNICAL SESSION II, Chair: Arun Tangirala, (@TTJ)	
11:15-11:50	K Aihara	Prediction and it's applications from high dimensional data observed from complex systems [Online]
11:50-12:25	Ana Amador	Neural oscillations and bird song rhythms
12:25-13:00	Rahul Pandit	The 3D axisymmetric Euler equation: A pseudospectral investigation of a potential finite time singularity and thermalisation
13:00-14:30	LUNCH	
	PARALLEL SESSION I, Chair: DV Senthilkumar (@TTJ)	PARALLEL SESSION II Chair: Nirmal Thyagu, (@Hall II)
14:30-14:45	Haider Hasan Jafri	Explosive transitions in coupled Lorenz oscillators
14:45-15:00	Aditi Kathpalia	Spectral estimation based on compressibility
15:00-15:15	Pragjyotish Gogoi	Inhomogeneous limit cycles to oscillation death transitions in nonlinear oscillators with similarity
15:15-15:30	Himanshu Mishra	Inertial effects on the transport of an anisotropic particle in surface gravity waves
15:30-15:45	J Venkatramani	Phase synchrony between the pitch and plunge modes in aeroelastic systems leading to stall flutter
15:45-16:00		Gaurab Sar Solvable model of driven matter with pinning
16:00-16:30	TEA	
	TECHNICAL SESSION III, Chair: Hiroshi Kori, (@TTJ)	
16:30-17:10	Rama Govindarajan	A dynamical system which actually isn't one
17:10-17:50	Sarika Jalan	Adaptation led tiered and cluster synchronisation in hypergraphs
17:50-18:30	E. Knobloch	Travelling spiral wave chimeras in coupled oscillator systems: emergence, dynamics and transitions
18:45-19:00	High Tea @ CLT	
19:00-20:30	Cultural Program: Recital by violin maestros Dr. M Lalitha and M Nandini, (@CLT)	



TECHNICAL SESSION IV, Chair: Radha Balakrishnan, (@TTJ)		
9:00-9:35	M Lakshmanan	Genesis of and progress in LPD equation [Online]
9:35-10:10	Miguel Sanjuan	Exploring noisy Hamiltonian Dynamics
10:10-10:45	Kori Hiroshi	Novel phenomena and analysis methods in oscillator networks: higher order interactions, higher order averaging and inference
10:45-11:15	TEA	
TECHNICAL SESSION V, Chair: G Litak, (@TTJ)		
11:15-11:50	D. Yurchenko	Non-smooth dynamics of a vibro-impact pair [Online]
11:50-12:25	A Palacios	Symmetry breaking bifurcations in networks of nonlinear oscillators applied to precision timing devices
12:25-13:00	R I Sujith	COVID-19 and Flame blowout in jet engines: What's in common?
13:00-14:20	LUNCH	
TECHNICAL SESSION VI, Chair: M Sanjuan, (@TTJ)		
14:20-14:50	R Viana	Fractal structures in open non-integrable Hamiltonian systems [Online]
14:50-15:20	Patrick Luodop	Network: amplification and electrical circuits [Online]
15:20-16:30	TEA / POSTER SESSION 1	
TECHNICAL SESSION VII, Chair: V Srinivas Chakravarti, (@TTJ)		
16:30-17:10	Gabriel Mindlin	Modelling birdsong production with low dimensional models: The Ultimate Test [Online]
17:10-17:50	Hilda Cerdeira	Phase transitions in Swarmalators: The XY model and other things
17:50-18:30	Kelly Iarosz	Brain: The Most Complicated Complex System [Online]

TECHNICAL SESSION VIII, Chair: S Flach, (@TTJ)

9:00-9:35	Theo Geisel	Musician's synchronization and the mystery of swing in jazz
9:35-10:10	Anirban Chakraborti	Zooming into financial markets using data science [Online]
10:10-10:45	Punit Paramananda	Noise assisted pattern fabrication

TEA

TECHNICAL SESSION IX, Chair: Arul Lakshminarayanan, (@TTJ)

11:15-11:50	Sitabhra Sinha,	Flags, landscapes and signalling: nonlinear dynamics of developmental pattern formation
11:50-12:25	Sergej Flach	Thermalisation universality classes for weakly non-integrable many body dynamics
12:25-13:00	Samridhi S Ray	Turbulent flows are not uniformly multifractal

LUNCH

**PARALLEL SESSION III, (@TTJ)
Chair: Sarika Jalan**

**PARALLEL SESSION IV, (@HALL II)
Chair: Dibakar Ghosh**

14:30-14:45	Nirmal Punetha	Heterogeneity induced synchronization in delay-coupled electronic oscillators	Md Nurujjaman	Statistical analysis of aftershocks of major stock market crashes: Insights from the 1987 crash
14:45-15:00	Anupama Roy	Effect of coupling on neuronal extreme events: mitigation and enhancement	Snehal Patil	Flow transitions of buoyancy-driven convection in circular convection cells
15:00-15:15	Shiva Dixit	Pathway selection by an active droplet	Prakash Duraisamy	Effect of Nonsmooth stiffness and viscoelastic damping on a bistable piezoelectric harvester
15:15-15:30	Shyamal Dana	Phase and amplitude coupling play contrarian role in synchrony	Raul Aristedes	Master stability functions of networks of Izhikevich neurons
15:30-15:45	Sumana Datta	Rotational synchronization of spiral and scroll waves	Sangeeta Ujjwal	Coupling induced multistability and chimeras in chaotic oscillators

TEA

TECHNICAL SESSION X, Chair: T Geisel, (@TTJ)

16:30-17:10	Jürgen Kurths	Climate meets Network Science: Exploring extreme events via a complex network [Online]
17:10-17:50	Michael Small	Choosing embedding lag and why it matters
17:50-18:30	Prashant Gade	Power laws in space-time: Real and complex exponents, Self-organized criticality and Griffiths phase, Ising type transitions

CONFERENCE DINNER, OPEN AIR THEATRE (@OAT)

19:00-22:00

TECHNICAL SESSION XI, Chair: M Small, (@TTJ)		
9:00-9:35	G. Ambika	Structure and stability of the power transmission network of India
9:35-10:10	Stefano Boccaletti	The transition to synchronisation in networked systems [Online]
10:10-10:45	Sudeshna Sinha	Disorder in aid of order
10:45-11:15	TEA	
TECHNICAL SESSION XII, Chair: A Palacios, (@TTJ)		
11:15-11:50	D. V. Senthilkumar	Exotic swarming dynamics of high dimensional swarmalators
11:50-12:25	Dibakar Ghosh	Dynamics on networks with time varying interactions
12:25-13:00	B. Tadic	Properties of phase synchronization on simplicial complexes in human connectome network [Online]
13:00-14:20	LUNCH	
TECHNICAL SESSION XIII, Chair: Rajarshi Roy, (@TTJ)		
14:20-14:50	G.Litak	A fractional derivative in dynamical systems and structures
14:50-15:20	Baowen Li	Heat conduction in low dimensional micro/nano scale systems - A non-equilibrium statistical problem from microelectronic chips [Online]
15:20-16:30	TEA / POSTER SESSION 2	
TECHNICAL SESSION XIV, Chair: Ram Ramaswamy, (@TTJ)		
16:30-17:10	A. Motter	Controlling localised networks [Online]
17:10-17:50	ROUND TABLE ON "PERSPECTIVES IN NONLINEAR DYNAMICS" - THE WAY AHEAD	
17:50-18:30		



DAY	COORDINATOR	Venue	TOPIC
<i>August 1</i> 15:00 -16:30	K Murali	Hall I	Hamiltonian and Dissipative Systems: Unusual attractors, experiment, analysis and signatures
<i>August 2</i> 15:00 -16:30	Sarthak Chandra	Hall I	Dynamics of neural circuits
	Syamal Dana	Hall III	Extreme events in Complex Systems
<i>August 3</i> 15:00 -16:30	Manish Srimali	Hall I	Perspectives in Reservoir Computing
	Amit Apte, Pranay Goel	Hall III	Data driven techniques and modelling dynamics
<i>August 4</i> 15:00 -16:30		Hall I	Discussions

Poster Session 1 (@Exhibition Hall, ICSR)

Suvam Pal	Directional synchrony among self-propelled particles under spatial influence.	Samana Pranesh	A quantitative analysis of Turing pattern formation in complex networks
Rajanya Chatterjee	Dynamical transitions in flexible piezoelectric flapper in the wake of a bluff body	Yusra Ahmed Saeed	Explosive transitions in coupled Rossler oscillators
Sourav Dey	Dynamical transitions in the flow past a flapping airfoil: Recurrence network approach	Neha Vishnoi	Effect of noise correlation on precursors of thermoacoustic instability in gas turbine combusts
Dhrubajyoti Biswas	Effects of generalised adaptive coupling in coupled phase oscillators	Ajay Subbaroyan	Leveraging developmental landscapes for model selection in boolean gene regulatory networks
Komal Chawla	Impact of a dissimilar node on Chaos suppression in Complex networks	Premalatha K	Symmetry broken dynamical states in globally coupled Stuart Landau oscillators.
Arzoo Narang	Maintenance of ecosystem diversity via stochasticity driven symmetry breaking	Parvej Khan	Chimera and cluster states in a network of pinned rotors in a chemical system
Vikash Kumar Dubey	Non-convergent outcomes in evolutionary games: An information theoretic view	Sourav Roy	Uncovering the role of time delays in shaping eco-evolutionary dynamics of cooperative behaviour
Swaathi P	Inertial particle dynamics in travelling wave flow	Rishab B Antosh	Characterising dynamical systems using persistent homology and machine learning
Abdul Quadir	Level neuronal models under noisy drive	N D Chavda	Average-fluctuation separation in energy levels in many-body quantum systems with k-body interactions
Shreyas R Gadge	Threshold-activated predator dispersal in spatially extended ecological systems	Aalhad A Bhatt	Organisation of species among trophic levels contributes to the robustness of complex systems
Ramana Bharathi	Mutual synchronisation of low-density jets	Anupama Sebastian	Electric field induced displacement of target-wave ignition centre in Belousov-Zhabontinsky reaction
Priyotosh Sil	Biologically meaningful regulatory logic enhances the convergence rate in boolean networks and bushiness of their state transition graph.	Amiya Das	Stability analysis of multiple solutions of nonlinear schrodinger equation with PT-symmetric potential
Kalash Verma	Expanding CCM applicability: Overcoming challenges in Causal Discovery	Krishna Priya V R	Evolution of quasi-geostrophic flow over topography
Dheeraj Tripathi	Synchronization behaviour of a stalled aeroelastic system subject to a stochastic inflow	Tanu Raghav	Smallworldness in hypergraphs
Ajit Mahata	Performance of RC on chaotic and stochastic time series: A comparative study	Saranya Biswas	Basin stability and P-bifurcation in stochastic dynamical systems



Poster Session 2 (@Exhibition Hall, ICSR)

Anjuman Ara Khatun	Path Minimisation by Active particles	Samrat Sohel Mandal	Authors are rational in citation game
Pampa Dey	Study on heterogeneous ensemble of inanimate camphor disks	Vivek Bharat Meshram	Dependence of density in Self-propelled Motion of Belousov-Zhabotinsky Reaction droplet
Priyanka Rajwani	Tiered synchronization in Kuramoto oscillators with adaptive higher-order interactions	Tapas Kumar Pal	Extreme rotational events in a forced-damped nonlinear pendulum
Mithun K	Application of GRU-powered Echo State Networks to predict the Hopf bifurcation dynamics of the Fitzhugh Nagumo Model	Richita Ghosh	Explosive death in Stuart Landau oscillators on simplicial complexes.
Calvin C Alvares	Identifying vulnerable points in real-world power grids	Swati Chauhan	Machine learning for phase ordering dynamics
Prabhash Kumar	Understanding the role of convective mixing on aerosols deposition in lung acini	Swaroop Sampad Pradhan	Study of the soliton solution of nonlinear schrodinger equation and its eigenvalues
Shiladitya Bhattacharya	An attempt to find self-organised criticality in crustal helium degassing	Sangita Dutta	Synchronisation in phase frustrated higher-order systems
Ayushi Suman	Multiple first-order transitions in simplicial complexes on multilayer systems	Tapas Sil	A new wavelet based algorithm to Chaotic Lorenz System
Sagar Zephania C F	A multistage Haar wavelet quasi-linearisation technique to Chaotic Rossler system	Sarabindu Dolui	Strain-induced domain wall motion in cubic magnetorestrictive materials under the influence of inertial effect and nonlinear dissipation
Narayan G Sabhahit	Self consistent method for Kuramoto oscillators with inertia having higher-order interactions	Mohd Meraj Khan	Radiation force and torque on dielectric Janus particle
Anu V S Nath	Lagrangian dynamics of heavy inertial particles in vortical flows	Md Sayeed Anwar	Synchronization of coupled phase oscillators in time-varying simplicial complexes.
R Senthamizhan	Emergent collective dynamical states in swarmalators	Gayathri Kumaran	Predicting the travelling of information in a deep web using deep learning methods
Suman Chakraborty	Selection-recombination-mutation dynamics: Gradient, limit cycle, and closed invariant curve	Smita Deb	Evading tipping points in socio-mutualistic networks via structure-mediated optimal strategy
Salam Luwang	Analysis of stock market volatility using high-frequency order transaction data based on Discrete time Markov chain model during USA-China Trade War of 2018	Rasha Shanaz	Does edge-of-chaos aid predictability? An analysis of the information processing capacity of electronic reservoir computers
Subhasanket Dutta	Quenching of oscillation and it's application in seizure	Bharathi J Kannan	Chaos and dynamical localization in interacting kicked systems