

CANES Past Seminars

On this page you will find seminars from 2017-22 associated with the [Cross-Disciplinary Approaches to Non-Equilibrium Systems](#).

For more information regarding our past and upcoming seminars please contact us on our email:

CANES@kcl.ac.uk

Contents

2017-18.....	2
2018-19.....	4
2019-20.....	5
2020-21.....	7
2021-22.....	10

2017-18

Date	Speaker	Affiliation	Video Link
5-10-2017	Dr Stephen Powell	University of Nottingham	<u>Non-equilibrium classical dynamics and quantum phases of dimer models</u>
08-11-2017	Dr Matteo Salvalaglio	UCL	<u>Nucleation, growth and polymorphic transitions in molecular materials: insights from molecular dynamics simulations</u>
15-11-2017	Dr Chiu Fan Lee	Imperial College London	<u>Universality in active matter</u>
22-11-2017	Dr Mostafa Shalabi	SwissFEL-Project, Paul Scherrer Institute, Switzerland	<u>Opportunities and challenges of nonlinear terahertz spectroscopy for ultrafast structural dynamics</u>
29-11-2017	Dr Jasmin Fisher	Univerity of Cambridge & Microsoft Research Cambridge	<u>Executable Biology: From Mechanistic Insights to Therapeutic Applications in Cancer</u>
06-12-2017	Prof. Dorothy Duffy	UCL	<u>Femtosecond laser induced melting: Modelling meets experiment</u>
13-12-2017	Prof. Stefan Kehrein	University of Goettingen	<u>Reversibility and Irreversibility in Quantum Many-Body Systems</u>
17-01-2018	Prof. Kim Christensen	Imperial College London	<u>Complexity Science approach to modelling Atrial Fibrillation</u>
25-01-2018	Prof. Giuseppe Mussardo	SISSA	<u>Prime Suspects and Coprime Accomplices; Quantum Tales in Number Theory</u>
31-01-2018	Prof. Sid Parameswaran	University of Oxford	<u>Many-body localization, symmetry, and topology</u>
14-02-2018	Dr Laura Foini	ENS, Paris	<u>Effective temperatures in isolated quantum systems</u>
21-02-2018	Dr Florian Mintert	Imperial College London	Decondensation in Non - Equilibrium Photonic Condensates: When Less Is More
07-03-2018	Prof. Koenraad Schalm	University of Leiden	<u>(Quantum) Chaos, hydrodynamics and black hole scrambling</u>

14-03-2018	Dr Robert Jack	University of Cambridge	<u>Geometrical properties of dynamical fluctuations in non-equilibrium systems</u>
02-05-2018	Dr Benedetta Mennucci	University of Pisa	<u>A quantum chemical view of the light-harvesting function in photosynthetic organisms</u>
09-05-2018	Dr Janet Anders	University of Exeter	<u>Thermodynamics beyond the weak coupling limit</u>
16-05-2018	Gerard McCaul	King's College London	<u>Boundaries and Oscillating Entropies in Closed Systems</u>
23-05-2018	Prof. Matej Praprotnik	Natioal Institute of Chemistry, Slovenia	<u>Multiscale Simulations of Biomolecular Systems</u>

2018-19

Date	Speaker	Affiliation	Video Link
17-10-2018	Prof Ard Louis	University of Oxford	Why the world is simple
31-10-2018	Dr Tobais Galla	University of Manchester	Stochastic population dynamics in switching environments
21-11-2018	Prof Angel Rubio	Max Plank Institute for the Structure and Dynamics of Matter	Photons and matter cooperate: new states of matter from novel first principles QEDFT formalism
28-11-2018	Dr Andrey Brukhno	STFC Daresbury	Simulation of surfactants and lipids in implicit solvent
05-12-2018	Dr Lucas Lacasa	Queen Mary University London	Identifying the hidden multiplex architecture of complex systems (or a new decomposition theory of non-Markovian dynamics)
09-01-2019	Dr Simona Cocco	ENS, Paris	Extracting features from protein sequence data with Restricted Boltzmann Machines
23-01-2019	Dr Gunnar Pruessner	Imperial College London	Field theory of particles in potentials
06-02-2019	Dr James Millen	Kings College London	Levitated particles as a platform for studying nanophysics

2019-20

Date	Speaker	Affiliation	Video Link
6-10-2019	Dr Lev Kantorovich	King`s College London	Non-equilibrium dynamics of open quantum systems
23-10-2019	Dr Aldo Glielmo	Int`l School for Advance Studies (SISSA)	Bayesian inference in condensed matter physics: learning force fields and wave functions
30-10-2019	Dr Thibault Bertrand	Imperial College London	Minimal models of Motile Living Matter in Complex Environments
06-11-2019	Dr Fabio Caccioli	University College London	Variance optimisation under an L1 constraint
13-11-2019	Dr Beatriz Olmos Sanchez	University of Nottingham	Collectively enhanced chiral photon emission from an atomic array near a nanofiber
20-11-2019	Dr Peter Bolhuis	University of Amsterdam	Reaction coordinates, kinetics, and free energy of complex activated (bio)molecular processes
27-11-2019	Dr Andrea Baronchelli	City University of London	How norms change: new evidence from data and experiments
04-12-2019	Dr Andrew James	University of Bristol	Non-thermal behaviour due to confinement in 1D and 2D
11-12-2019	Dr Valentina Ros	ENS Paris	Statistical properties of energy barriers and activated dynamics in high-dimensional energy landscapes
15-01-2020	Gregg Szep	CANES CDT	Inference of codimension one bifurcations with differentiable psuedo arclength continuation methods
05-02-2020	Dr Tristan Bereau	University of Amsterdam	Computational screening of drug-membrane interactions from molecular dynamics
11-02-2020	Professor Robert van Leeuwen	University of Jyväskylä	New developments in diagrammatic many-body theory for non-equilibrium systems
26-02-2020	Dr Jonathan Ward	University of Leeds	State-space reduction of dynamics on networks using symmetry: a study of real-world networks

04-03-2020	Dr Felix Ritort	University of Barcelona	<u>Thermodynamic Information in the Maxwell Demon</u>
11-03-2020	Dr Andrea Pizzoferrato	University of Bath	Current fluctuations for partial asymmetric stochastic particle systems on a ring
16-04-2020	Dr Davide Faranda	LSCE, University of Paris - Saclay	Asymptotic estimates of SARS-CoV-2 infection and their sensitivity to stochastic perturbation
13-05-2020	Professor Tim Rogers	University of Bath	Predicting the speed of epidemics spreading on networks
29-07-2020	Dr Gerard McCaul	Tulane University	Taking back quantum control

2020-21

Date	Speaker	Affiliation	Video Link
28-10-2020	Dr Marylou Gabrié	New York University	Progress and hurdles in the statistical mechanics of deep learning
11-11-2020	Prof Pasquale Calabrese	SISSA, Italy	New results on the entanglement evolution in non-equilibrium systems
25-11-2020	Prof Irene Giardinà	Univ of Rome, Italy	Out of equilibrium behaviour and dynamical mode coupling in the collective motion of biological groups
02-12-2020	Prof Shlomo Havlin	Bar-Ilan University, Israel	Cascading Failures in Complex Interdependent Networks
09-12-2020	Prof Reimer Kuehn	King`s College London	To Ease or Not to Ease? That is the Question
27-01-2021	Prof Jorge Kurchan	École Normale Supérieure, Paris	Masterclass "Thermalisation and multi-thermalisation" part I: "Revisiting `ordinary' thermalisation"
10-02-2021	Prof Jorge Kurchan	École Normale Supérieure, Paris	Masterclass "Thermalisation and multi-thermalisation" part II: "Glasses: a different perspective"
17-02-2021	Dr Luca Capriotti	Department of Mathematics, University College London & Tandon School of Engineering, New York University	Adjoint Algorithmic Differentiation (ADD): How to better hedge financial risks, crack some of the puzzles of condensed matter and much more with upside-down derivatives
17-03-2021	Prof Jean-Sebastien Caux	University of Amsterdam	Masterclass "Dynamics of many-body quantum systems: integrability from Newton's cradle to Gibbs' grave", part I "Integrability in equilibrium"
24-03-2021	Prof Jean-Sebastien Caux	University of Amsterdam	Masterclass "Dynamics of many-body quantum systems: integrability from

			Newton's cradle to Gibbs' grave", part II: "Integrability out of equilibrium"
19-05-2021	Dr Katie Bentley	King`s College London	Temporal modulation of vascular patterning: filopodia speed up collective Notch dynamics in silico and in vivo
16-06-2021	Prof Franca Fraternali	Randall Centre for Cell & Molecular Biophysics, King`s College London	Nanocapsule Designs for Antimicrobial Resistance
14-7-2021	Prof Gábor Csányi	University of Cambridge	CANES mini workshop on Machine Learning in the Physical and Biological Sciences: Machine learned force fields: status and challenges
14-07-2021	Prof Frank Noé	Freie Universität Berlin	CANES mini workshop on Machine Learning in the Physical and Biological Sciences: Boltzmann generators and stochastic normalizing flows
02-03-2022	Professor Werner Krauth	Laboratoire de Physique, Ecole normale supérieure, Paris, France	<u>Fast non-reversible Markov chains in statistical physics</u>
03-03-2022	Professor Werner Krauth	Laboratoire de Physique, Ecole normale supérieure, Paris, France	<u>Masterclass "Markov-chain Monte Carlo: A modern primer"- part III "Meta algorithms. Consensus sampling"</u>
09-03-2022	Dr Robert Ziolek	King`s College London	Molecular Dynamics Studies of Non-Equilibrium Systems: Translocating and Amorphous Polymers
15-03-2022	Professor Jan Pawłowski	Universität Heidelberg, Germany	<u>Masterclass "The real-time functional renormalisation group: theory & applications" - part I</u>
16-03-2022	Professor Jan Pawłowski	Universität Heidelberg, Germany	<u>Masterclass "The real-time functional renormalisation group: theory & applications" - part II</u>
17-03-2022	Professor Jan Pawłowski	Universität Heidelberg, Germany	<u>Masterclass "The real-time functional renormalisation</u>

			<u>group: theory & applications” - part III</u>
23-03-2022	Prof Anushya Chandran	Boston University	<u>Quantization of dynamics in quasi-periodically driven systems</u>
30-03-2022	Prof Nigel Goldenfeld	University of California San Diego	The life and death of turbulence

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06-10-2021	Prof Reimer Kühn	King`s College London	Introduction to the Renormalization Group
13-10-2021	Prof Werner Krauth	Laboratoire de Physique, Ecole normale supérieure, Paris, France	Non-reversible (i.e. non-equilibrium) Markov chains, and their approach to ... equilibrium
20-10-2021	Prof Deirdre Hollingsworth	University of Oxford, Bid Data Institute	CANES mini-workshop on infectious diseases and COVID-19 modelling: "Understanding parameter assumptions in modelling the COVID-19 pandemic – the example of contact tracing"
20-10-2021	Dr Marc Baguelin	Imperial College London	CANES mini-workshop on infectious diseases and COVID-19 modelling: "Modelling England's roadmap out of lockdown"
27-10-2021	Joseph Durnin	King`s College London	Transport beyond the Euler scale in the presence of external fields
10-11-2021	Prof Aditi Mitra	New York University	Floquet chains and the stability of their edge modes
01-12-2021	Christian Hurry	King`s College London	Vaccination with partial transmission and social distancing on contact networks
15-12-2021	Debalina Banerjee	King`s College London	Pressure induced electronic transitions in Samarium monochalcogenides
15-12-202	Yanik Pascal-Foerster	King`s College London	Quantification of Legal Complexity Through Mean First-Passage Times
02-02-2022	Professor Lea Ferreira dos Santos	Yeshiva University, Stern College for Women, New York, USA	Equilibration time in many-body quantum systems
09-02-2022	Professor Eugene Demler	ETH Zurich, Switzerland	Universality of optical responses of photoexcited solids

16-02-2022	Professor Francesca D. Ciccarelli	King`s College London	<u>ML approaches to prioritise cancer drivers from genomic data</u>
28-02-2022	Professor Werner Krauth	Laboratoire de Physique, Ecole normale supérieure, Paris, France	<u>Masterclass "Markov-chain Monte Carlo: A modern primer"- part I "Fundamentals: From Balance conditions to non-reversibility and to lifting. Single particle on a path graph"</u>
01-03-2022	Professor Werner Krauth	Laboratoire de Physique, Ecole normale supérieure, Paris, France	<u>Masterclass "Markov-chain Monte Carlo: A modern primer"- part II "Some surprising reversible and non-reversible Markov chains for hard spheres. Perfect sampling"</u>
02-03-2022	Professor Werner Krauth	Laboratoire de Physique, Ecole normale supérieure, Paris, France	<u>Fast non-reversible Markov chains in statistical physics</u>
03-03-2022	Professor Werner Krauth	Laboratoire de Physique, Ecole normale supérieure, Paris, France	<u>Masterclass "Markov-chain Monte Carlo: A modern primer"- part III "Meta algorithms. Consensus sampling"</u>
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23-03-2022	Prof Anushya Chandran	Boston University	<u>Quantization of dynamics in quasi-periodically driven systems</u>
30-03-2022	Prof Nigel Goldenfeld	University of California San Diego	The life and death of turbulence
29-04-2022	Jean-Philippe Bouchaud	Capital Fund Management (CFM)	Fragile Financial Markets & Economies

