Harmonic Analysis, Stochastics and PDEs in Honour of the 80th Birthday of Nicolai Krylov ICMS, Edinburgh 20 – 24 June 2022

# Programme

#### Monday 20 June 2022 – All times are BST

09.10- 9.30 <b>(BST)</b>	Registration with coffee
09:30 -09.45 <b>(BST)</b>	Introductions
09:45-10:30 ( <b>BST)</b>	<b>Röckner, Michael</b> (University of Bielefeld, Germany) <i>Title: On A Longstanding Open Problem In The Theory Of Markov Processes.</i>
10.30-11.00	Coffee/Tea
11.00-11.45 <b>(BST)</b>	<b>Dong, Hongjie</b> (Brown University, USA) <i>Title: Sobolev estimates for degenerate Kolmogorov equations</i>
11.55-12.20 <b>(BST)</b>	<b>Gerencsér, Máté</b> (TU Wien, Austria) <i>Title: Regularisation by noise with subcritical drifts or multiplicative noise</i>
12.20-14.00	Lunch
14.00-14.45 <b>(BST)</b>	<b>Tolomeo, Leonardo</b> (Hausdorff Center for Mathematics) <i>Title: Phase transitions of the focusing</i> $\Phi^p_1$ <i>measures</i>
14.55-15.40 <b>(BST)</b>	<b>Bringmann, Bjoern</b> (Institute for Advanced Study/Princeton University, USA) <i>Title: Invariant Gibbs measures for the three-dimensional cubic nonlinear wave equation.</i>
15.40-16.05	Coffee/Tea
16.05-16.30 <b>(BST)</b>	<b>Robert, Tristan</b> (Université de Lorraine, France) <i>Title: Variational methods for some singular stochastic elliptic PDEs</i>
(BST)	<ul> <li>Dietze, Charlotte (LMU Munich) Dispersive Estimates for Nonlinear Schrödinger Equations with External Potentials.</li> <li>Cornalba, Federico, (Institute of Science and Technology Austria (ISTA)) On discretisations of Dean-Kawasaki models.</li> <li>Lee, Jinyeop (LMU Munich) On the time dependence of the rate of convergence towards Hartree dynamics for interacting Bosons.</li> <li>Woo, Kwan (Korea University) Sobolev and trace embeddings via mollifications.</li> <li>Zheng, Guangqu (University of Edinburgh) Pathwise well-posedness of stochastic nonlinear Schrödinger equations with multiplicative noises.</li> <li>Zine, Younes (University of Edinburgh) Convergence problems for singular stochastic dynamics.</li> <li>Wu, Sizhou (Nanyang Technological University) Multilevel Picard Approximation Scheme for Semilinear Parabolic Partial Integro- differential Equations.</li> <li>Germ, Fabian (University of Edinburgh) Nonlinear filtering for partially observed jump diffusions.</li> </ul>

## Tuesday 21 June 2022

09.30-10.15	<b>Kim, Kyeong-Hun</b> (Korea University, Korea)
<b>(BST)</b>	<i>Title:</i> Sobolev regularity for PDEs with fractional Laplacian on \$C^{1,1}\$ open sets.
10.15-10.45	Coffee/Tea
10.45-11.30	<b>Safonov, Mikhail</b> (University of Minnesota, USA)
<b>(BST)</b>	<i>Title: On the boundary estimates for solution to second order elliptic and parabolic equations</i>
11.40-12.25	<b>Peszat, Szymon</b> (Jagiellonian University, Poland)
<b>(BST)</b>	<i>Title: Heat equation with Dirichlet white noise boundary conditions.</i>
12.25 -14.00	Lunch
14.00-14.25	Maurelli, Mario (Università degli Studi di Milano, Italy) (ONLINE)
<b>(BST)</b>	Title: Non-explosion by Stratonovich noise for ODEs
14.35-15.00	Hoshino, Masato (Osaka University, Japan)
<b>(BST)</b>	<i>Title: Paracontrolled calculus and regularity structures.</i>
15.10–15.35	Dareiotis, Konstantinos (University of Leeds, UK)
( <b>BST)</b>	Title: Approximation of stochastic differential equations with irregular drifts
15.35-16.05	Coffee/Tea
16.05-16.30	<b>Sun, Chenmin</b> (Universtité Paris-Est Créteil, France)
<b>(BST)</b>	<i>Title: Weak Universality for a class of nonlinear wave equatoins</i>
17.30	Doors open for Public Lecture
18.00-19.00 ( <b>BST)</b>	Public Lecture <b>Chevyrev, Ilya</b> (University of Edinburgh, UK) <i>Title: The rough journey of Brownian motion: from pollen particles, to Avogadro number, to</i> <i>stock markets.</i>

## Wednesday 22 June 2022

09.30-10.15	<b>Weis, Lutz</b> (Karlsruhe Institute for Technology, Germany)
( <b>BST)</b>	<i>Title: A stochastic maximal function and regularity estimates for parabolic stochastic evolution equations.</i>
10.25-11.10	<b>Veraar, Mark</b> (Delft University of Technology, Netherland)
<b>(BST)_</b>	<i>Title: SPDE in critical spaces.</i>
11.10-11.40	Coffee/Tea
11.40-12.25	<b>Lee, Kijung</b> (Ajou University, Korea)
<b>(BST)</b>	<i>Title: Stochastic parabolic equation and Dirichlet boundary condition.</i>
	Half Day – Please note no lunch will be served

#### Thursday 23 June 2022

09.30-10.15	<b>Trudinger, Neil</b> (Australian National University, Australia) (ONLINE)
<b>(BST)</b>	<i>Title: Classical solvability of generated Jacobian equations.BC</i>
10.15-10.45	Coffee/Tea
10.45-11.30	<b>Da Prato, Giuseppe</b> (Scuola Normale Superiore, Pisa) (ONLINE)
<b>(BST)</b>	<i>Title: Existence of the gradient for solutions of some Hypoelliptic Dirichlet problems</i>
11.40-12.25	<b>Priola, Enrico (University of Pavia, Italy) (ONLINE)</b>
<b>(BST)</b>	<i>Title: Poisson process and sharp constants in</i> \$L^p \$ and Schauder estimates for a class of degenerate Kolmogorov operators.
12.25-14.00	Lunch
14.00-14.45	<b>Pardoux, Etienne</b> (Aix-Marseille Université, France) (ONLINE)
( <b>BST)</b>	<i>Title: Uniqueness of the filtering equations in the space of measures</i>
14.55-15.40	<b>Freidlin, Mark</b> (University of Maryland, USA) (ONLINE)
<b>(BST)</b>	<i>Title: Long-time Influence of Small perturbations.</i>
15.40-16.05	Coffee/Tea
16.05-16.30	<b>Wang, Yuzhao</b> (University of Birmingham)
<b>(BST)</b>	<i>Title: Stochastic quantization of Liouville conformal field theory</i>
18.00	Pre-dinner drinks
19.00	Conference Dinner

## Friday 24 June 2022

09.30-09.55 ( <b>BST)</b>	<b>Li, Guopeng</b> (University of Edinburgh) <i>Title: Convergence on the finite-depth fluid equation in the shallow water surface and infinitely</i> <i>deep water limits</i>
10.05-10.30 ( <b>BST)</b>	<b>Forlano, Justin</b> (UCLA, USA) (ONLINE) <i>Title: Global well-posedness and quasi-invariance of Gaussian measures for fractional</i> <i>nonlinear Schr\"odinger equations</i>
10.30-11.00	Coffee/Tea
11.00-11.45 <b>(BST)</b>	<b>Kim, Doyoon</b> (Korea University, Korea) <i>Title: Lp theory for parabolic equations with local and non-local time derivatives.</i>
11.55-12.40 <b>(BST)</b>	Veretennikov, Alexander (University of Leeds) Title: On ergodic properties of a diffusion with switching.
	Half Day – Please note no lunch will be served
	Workshop Close