

Workshop on
“Higher Structures Emerging from Renormalisation”

November 15 - 19, 2021

organized by

**Pierre Clavier (U of Haut-Alsace), Kurusch Ebrahimi-Fard (NTNU, Trondheim),
Peter K. Friz (TU Berlin), Harald Grosse (U Vienna), Dominique Manchon (U Clermont
Auvergne), Sylvie Paycha (U of Potsdam)**

• **Monday, November 15th, 2021**

08:30 – 09:00 **Registration**

09:00 – 10:00 (online) **Vincent Vargas (U Genève)**

Liouville conformal field theory: from probability theory to the conformal bootstrap

Discussant: Nathanael Berestycki

10:15 – 11:15 **Erik Panzer (U Oxford)**

Tropical field theory

Discussant: Oliver Schnetz

11:15 – 11:45 **Coffee/Tea Break**

11:45 – 12:45 **Estanislao Herscovich (U Grenoble Alpes)**

Quantum field theory and vertex algebras within 2-monoidal categories

Discussant: Kasia Rejzner

12:45 – 14:15 **Lunch Break**

14:15 – 15:15 (online) **Gerald Dunne (U of Connecticut)**

Non-Perturbative Physics from Perturbative Hopf-Algebraic Dyson-Schwinger Equations

Discussant: Frederic Fauvet

16:00 – 17:00 **Public lecture by Michael Miller (U Toronto)** *The (un?)reasonable effectiveness of mathematics in the natural sciences*

Moderated by Frederic Patras

• **Tuesday, November 16th, 2021**

09:00 – 10:00 **Felix Otto (MPI Leipzig)**

The structure group in regularity structures: avoiding trees

Discussant: Rosa Preiß

10:15 – 11:15 (online) **Ajay Chandra (Imperial College, London)**

Symmetry and renormalisation in regularity structures

Discussant: Hendrik Weber

11:15 – 11:45 **Coffee/Tea Break**

11:45 – 12:45 **Owen Gwilliam (U Mass Amherst)**

From Feynman diagrams to commutative diagrams

Discussant: Claudia Scheimbauer

12:45 – 14:15 **Lunch Break**

14:15 – 15:15 **José M. Gracia-Bondía (Universidad de Costa Rica)**

Revisiting the Okubo–Marshak Argument

Discussant: Pawel Duch

15:15 – 15:35 **Coffee/Tea Break**

15:35 – 17:00 **Round table**

Foundations of QFT

Chaired by Frederic Patras

20:00 – **Conference dinner**

- **Wednesday, November 17th, 2021**

09:00 – 10:00 **Franz Lehner (TU Graz)**

Cumulants, Spreadability and Quasisymmetric functions

Discussant: Frederic Patras

10:15 – 11:15 **Elba Garcia Failde (Sorbonne U, Paris)**

Topological recursion, discrete surfaces and cohomological field theories

Discussant: Raimar Wulkenhaar

11:15 – 11:45 **Coffee/Tea Break**

11:45 – 12:45 **Loic Foissy (U of Littoral Côte d’Opale, Dunkerque)**

Cointeracting bialgebras

Discussant: Joscha Diehl

– **Free afternoon**

- **Thursday, November 18th, 2021**

09:00 – 10:00 **Yvain Bruned (U Edinburgh)**

Locality for singular stochastic PDEs

Discussant: Tom Klohe

10:15 – 11:15 **(online) Masato Hoshino (U Osaka)**

Paracontrolled calculus and regularity structures

Discussant: Nicolas Perkowski (online)

11:15 – 11:45 **Coffee/Tea Break**

11:45 – 12:45 **Michael Miller (U Toronto)**

A Philosopher Looks at Epstein-Glaser Renormalization

Discussant: Jose M. Gracia-Bondía

12:45 – 14:15 **Lunch Break**

14:15 – 15:15 **John Dougherty (LMU Munich)**

Some philosophical aspects of the renormalization of gauge theories

Discussant: Frederic Patras

15:30 – 16:30 **(online) Karen Yeats (U Waterloo)**

Combinatorics of higher order renormalization group equations

Discussant: Michael Borinsky

- **Friday, November 19th, 2021**

09:00 – 10:00 **(online) Rongchan Zhu (AMSS, Beijing)**

Singular kinetic equations and applications

Discussant: Nils Berglund

10:15 – 11:15 (online) **Johannes Thürigen (WWU Münster)**
Combinatorial Dyson-Schwinger equations in tensorial field theory
Discussant: Alexander Hocke (online)

11:15 – 11:45 **Coffee/Tea Break**

11:45 – 12:45 **Alessandra Frabetti - Maria Immaculada Galvez Carrillo**

All talks take place at the Erwin Schrödinger Institute - Boltzmann lecture hall! Online participation is possible via zoom. Zoom coordinates are available on request (secr@esi.ac.at) and after registration until November 12, 2021.