

Online Workshop on
“Higher Structures Emerging from Renormalisation”
October 12 - 16, 2020

organized by

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

• **Monday, October 12th, 2020**

09:15 – 10:00 **Leila Schneps (CNRS, Paris)**

A dimorphic description of the Grothendieck-Teichmüller Lie algebra

10:00 – 10:15 **Break**

10:15 – 11:00 **Lorenzo Zambotti (Sorbonne U, Paris)**

A Microlocal Approach to Renormalization in Stochastic PDEs

11:00 – 11:15 **Break**

11:15 – 12:00 **Klaus Fredenhagen (U Hamburg)**

Renormalization and C^ -algebras*

12:00 – 13:15 **Lunch Break**

13:15 – 14:00 **Bruno Vallette (Sorbonne U, Paris)**

Operadic renormalisation group

14:00 – 14:15 **Break**

14:15 – 15:00 **Loic Foissy (ULCO)**

Cointeracting bialgebras

15:00 – 15:30 **Break**

15:30 – 16:15 **Dirk Kreimer (HU Berlin)**

Renormalization, Categories and Self-similarity

16:15 – 16:30 **Break**

16:30 – 17:15 **Yannic Vargas (IVIC)**

Algebraic structure of the Hopf algebra of double posets

• **Tuesday, October 13th, 2020**

09:15 – 10:00 **Alexander Schmeding (U of Bergen)**

Lie groups of Hopf algebra characters

10:00 – 10:15 **Break**

10:15 – 11:00 **Vincent Rivasseau (U Paris Sud)**

Three roads from tensors models to continuous geometry

11:00 – 11:15 **Break**

11:15 – 12:00 **Franz Lehner (TU Graz)**
Cumulants, Hausdorff Series and Noncommutative Quasisymmetric Functions

12:00 – 13:15 **Lunch Break**

13:15 – 14:00 **Dominique Manchon (U of Auvergne)**
Families of algebraic structures

14:00 – 14:15 **Break**

14:15 – 15:00 **Joscha Diehl (U Greifswald)**
Tropical quasisymmetric functions

15:00 – 15:30 **Break**

15:30 – 16:15 **Li Guo (Rutgers U)**
Renormalization of quasisymmetric functions

16:15 – 16:30 **Break**

16:30 – 17:15 **Kasia Rejzner (U of York)**
A geometrical interpretation of the unitary Master Ward Identity

- **Wednesday, October 14th, 2020**

09:15 – 10:00 **Claudia Malvenuto (Sapienza)**
Primitive elements in the Poirier-Reutenauer Hopf Algebra of tableaux

10:00 – 10:15 **Break**

10:15 – 11:00 **Raimar Wulkenhaar (U Münster)**
Blobbed topological recursion of the quartic analogue of the Kontsevich model

11:00 – 11:15 **Break**

11:15 – 12:00 **Damien Calaque (U Montpellier)**
Deformation quantization with branes and coloured MZVs

12:00 – 13:15 **Lunch Break**

13:15 – 14:00 **Enrico Russo (Sorbonne U, Paris)**
Renormalisation through WSD equations

14:00 – 14:15 **Break**

14:15 – 15:00 **Marc Bellon (Sorbonne U, Paris)**
Ward-Schwinger-Dyson equations and their resurgent analysis

15:00 – 15:30 **Break**

15:30 – 16:15 **Gerald Dunne (U of Connecticut)**
Resurgent Asymptotics of Hopf Algebraic Dyson-Schwinger Equations

16:15 – 16:30 **Break**

16:30 – 17:15 **Topical Discussion**

- **Thursday, October 15th, 2020**

09:15 – 10:00 **Yvain Bruned (U Edinburgh)**
Resonance based schemes for dispersive equations via decorated trees

10:00 – 10:15 **Break**

10:15 – 11:00 **Ajay Chandra (Imperial College, London)**
Regularity and Coherence of Modelled Distributions

11:00 – 11:15 **Break**

11:15 – 12:00 **Nikolas Tapia (TU Berlin)**
Unified signature cumulants and generalized Magnus expansions

12:00 – 13:15 **Lunch Break**

13:15 – 14:00 **Antoine Hocquet (TU Berlin)**
Monoid-valued Sewing Lemmata and applications

14:00 – 14:15 **Break**

14:15 – 15:00 **Alessandra Frabetti (U Lyon)**
Transport maps as direct connections on groupoids

15:00 – 15:30 **Break**

15:30 – 16:15 **Ismaël Bailleul (U de Rennes 1)**
Paracontrolled calculus and regularity structures

16:15 – 16:30 **Break**

16:30 – 17:15 **Antoine Mouzard (U de Rennes 1)**
Quasilinear singular SPDEs and paracontrolled calculus

• **Friday, October 16th, 2020**

09:15 – 10:00 **Beatrice de Tiliere (U Paris-Dauphine)**
Elliptic dimers and genus 1 Harnack curves

10:00 – 10:15 **Break**

10:15 – 11:00 **Viet Dang Nguyen (U Lyon)**
The spectral action principle on Lorentzian scattering spaces

11:00 – 11:15 **Break**

11:15 – 12:00 **Michał Wrochna (U of Cergy-Pontoise)**
Why do we need de Sitter space?

12:00 – 13:15 **Lunch Break**

13:15 – 14:00 **Nicolas Gilliers (NTNU, Trondheim)**
Shuffle algebras in operator-valued probability theory.

14:00 – 14:15 **Break**

14:15 – 15:00 **Antti Kupiainen (U Helsinki)**
Conformal Bootstrap for Liouville Conformal Field Theory

15:00 – 15:30 **Break**

15:30 – 16:15 **Josef Teichmann (ETH Zürich)**
Randomized signature methods and Reservoir Computing

All talks take place virtual via zoom meeting. Meeting coordinates are available on request if you want to join.