Séminaire d'algèbre, topologie et géométrie
Jeudi 2 mai à 14h
Salle I

Joachim Kock

Barcelone

Polynomial functors over groupoids : from program semantics to quantum field theory

Polynomial functors are essentially functors defined in terms of sums, products, and exponentiation, and can be seen as a categorification of elementary arithmetic. I will explain their role in program semantics to express generic data type constructors, and in particular inductive types, and how groupoid coefficients allow for a type interpretation of Feynman graphs as wellfounded trees. Inductive types are solutions to fixpoint equations. From the viewpoint of Quantum Field Theory, these are the combinatorial Dyson-Schwinger equations.