



Title:	<i>Mathematical Aspects of QFT</i>
Lecturers:	Claudio Dappiaggi, Paolo Rinaldi
Duration:	24 hours
CFU:	4
Period:	Aprile - Maggio 2025
Content:	<p>Aim of the course is to discuss the interplay between novel mathematical techniques developed in the framework of stochastic partial differential equations and the mathematical formulation of quantum field theory.</p> <p>More into detail, this interplay, which goes under the name of stochastic quantisation, will be analyzed having in mind a large class of applications to non-perturbative QFT, such as scalar theories, Fermionic theories and the even more recent analysis of Yang-Mills theory.</p> <p>A relevant part of the course will be dedicated to the presentation of the mathematical tools required by the stochastic quantisation program, ranging from some measure theoretical arguments to PDE techniques. It is suggested that the student has a background in functional analysis, for example having taken the relevant MSc course.</p>
Notes	The exam will consist of a presentation (20-30 minutes long) on a topic, closely connected to the content of the course.