



Within the PhD programme in Mathematical Sciences

Prof. Dr. **Massimiliano Gubinelli**

Institute for Applied Mathematics & Hausdorff Center for Mathematics
University of Bonn

will offer a PhD course on

Stochastic quantization of the Euclidean quantum field theory

Abstract

In this course we will learn about the stochastic quantization of the Euclidean quantum field theory of a scalar boson with quartic interaction on R^d and its main properties. We build the Φ_3^4 measure as the limit of the invariant measure of a finite dimensional system of stochastic differential equations. The proof proposed uses several analytic and probabilistic techniques, such as white noise analysis, weighted Besov spaces on lattice and para-products, which find also applications in other problems arising in the study of deterministic and stochastic singular differential equations. All these tools and ideas will be gradually introduced and explained during the lectures. The course is as much as possible self-contained and requires as prerequisite only basic knowledge of stochastic and functional analysis.

Scheduling

The course will be held via Zoom platform
from February 15 to February 25, 2021

from 10.00 to 12.00 and from 14.00 to 16.00 with the following scheduling:
15, 16, 18, 22, 25 February

Link for updates: <https://www.iam.uni-bonn.de/abteilung-gubinelli/sq-lectures-milan-ws2021>

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