

Institute for Applied Mathematics, Bonn University

Oberseminar Stochastik

Thursday, 26 January 2023, 16:30

Lipschitz-Saal (LWK 1.016)

Marco Falconi

Politecnico di Milano

Renormalization at any order of lattice infrared QED₄

In this talk, based on a joint ongoing project with A. Giuliani and V. Mastropietro, we study the renormalization group flow of the coupling constants for a UV regularized theory of euclidean quantum electrodynamics in four dimensions, and show asymptotic freedom in the IR, with the introduction of a single, gauge-invariant, counterterm. While the methods used are largely non-perturbative, the final result is still perturbative. This result is a first step in putting on firm mathematical grounds what was predicted by the founding fathers of QED more than sixty years ago.