

Joint Seminar

Workgroup of Prof. Felix Finster / Uni Regensburg
Workgroup Mathematical Foundations of Physics / LMU München

Wednesday 06.07.2016

14:00-14:50

Room B047,

Christian Hainzl (Uni Tübingen)

No Photon QED in the Hartree-Fock Approximation

Abstract: I will review several works in collaboration with Gravejat, Lewin, Sere, Solovej where we try to establish a well defined Hamiltonian formalism for relativistic Fermions.

15:00-15:50

Room B047,

Felix Hänle (LMU München)

Resonances as Poles of the Scattering Matrix in Non-Relativistic QED

Abstract: I will give an introduction to one of our current projects, namely the identification of the poles of the scattering matrix with the resonances in non-relativistic QED. Thereby, we want to give a explanation of the connection between the experiment and the mathematical theory of resonances. The preliminaries and the objectives will be stated in the Spin-Boson model, being the simplest model of non-relativistic QED which still allows a physical interpretation.

16:30-17:20

Room B004,

Simone Murro (Uni Regensburg)

On Quasi-Free State for CAR Algebra and the Fermionic Signature Operator

Abstract: The algebraic approach to QFT is based on two steps: the assignment of a physical system a $*$ -algebra and the construction of a state. In 1971 a full characterisation of quasi-free states was given by Araki. Taking advantage of his results, we present a functional analytic construction of quasi-free states for quantum Dirac fields and we investigate as concrete example the Rindler spacetime. In the last part of the talk, we propose a modification of this construction, in order to include more general framework.