

Jonas Lampart : Singular perturbations and renormalisation in non-relativistic quantum field theory

lundi 12 juin 2023 15:00 (1 heure)

I will explain the relation of ultra-violet renormalisation to the theory of singular perturbations of self-adjoint operators in some examples from non-relativistic quantum field theory.

After introducing the relevant formalism, I will discuss in detail a toy model of particle creation and annihilation at a point source.

I will then outline how the same approach can be extended to more interesting models in which non-relativistic particles interact with a quantum field.

An example is the Bogoliubov-Fröhlich Hamiltonian, modelling the interaction of an impurity in a Bose-Einstein Condensate with the field of Bogoliubov excitations.