

Announcement

Seminar on Deformation Quantization

25. 11. 2022 at 2pm CEST/CET

Seminarroom SE 30

DANIELE VOLPE (UNIVERSITY OF TRENTO)

Paracausal deformations of globally hyperbolic spacetimes and Møller operators
in AQFT

In recent works with V. Moretti and S. Murro, we constructed a family of isomorphisms relating the solution spaces of normally hyperbolic and Proca operators built out of different globally hyperbolic spacetimes. The isomorphisms extend to the CCR algebras built out of the aforementioned Green hyperbolic operators and preserve the singularity structure of states. Since we were inspired by scattering theory, these isomorphisms are named Møller operators. In order to achieve our goal, we introduced the notion of paracausal relation in the set of globally hyperbolic Lorentzian structures on a fixed differentiable manifold: if two metrics fall in the same equivalence class, then the existence of the Møller operators is guaranteed. In this talk I will summarize our results, focusing on the geometric construction we developed.

Invited by Stefan Waldmann