

MP 3: Noncommutative Spacetime

Zeit: Dienstag 9:45–10:25

Raum: 30.45: 201

MP 3.1 Di 9:45 30.45: 201

The spectral action for Dirac operators with torsion —
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We derive a formula for the gravitational part of the spectral action for Dirac operators on 4-dimensional manifolds with torsion. We find that the torsion becomes dynamical and we deduce the Lagrangian for the Standard Model of particle physics in presence of torsion from the Chamseddine-Connes Dirac operator.

MP 3.2 Di 10:05 30.45: 201

Wick Rotation on Noncommutative Space — •THOMAS

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We consider Euclidean Moyal space with commutative time and investigate ways to get from a Euclidean field theory to a Minkowskian quantum field theory. Two main approaches are discussed: firstly, we start with a Euclidean net of C^* -algebras satisfying the so-called time-zero condition and construct a Minkowskian net by analytically continuing the representation of the remaining Euclidean symmetries to a unitary representation of the corresponding Poincare subgroup. Secondly, we present results concerning the analytic continuation of non-commutative Schwinger functions.