



UC3M-ICMAT Seminar – 2014

## Applied Probability and Statistics

### On the Anti de Sitter / Conformal Field Theory Conjecture for Euclidean Quantum Fields

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Thursday, March 27, 2014

11h00, ICMAT, Aula Gris I

We consider Euclidean Quantum fields with exponential interaction on 2D Euclidean Anti de Sitter Space. These can be formulated in a mathematically rigorous way using the path integral formalism by R. Minlos. We then discuss the restriction of these field theories to the conformal boundary of the AdS space for interacting quantum fields with exponential interaction. At the same time, we also consider the generating functionals obtained from the boundary value prescription motivated by string theory and we prove the equivalence of both approaches in the case, where the interaction contains an infra red cut off. This enables one to give mathematical proofs for various properties of the corresponding boundary quantum field theories. The removal of the infra red cut off however is different from usual constructive quantum field theory and easily leads to triviality of the theory. We prove such a result for the exponential interaction of the bulk field using decoupling inequalities.

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