## Quantum Gravity Colloquium 6



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## Tomasz Trzésniewski: The Discrete Semiclassical Action of CDT

Friday 7 October 2011 14:15 (45 minutes)

CDT model is a nonperturbative approach to quantum gravity, demonstrating a spontaneous generation of the semiclassical solu- tion. Gravitational path integral is approximated by the weighted sum over causality-preserving simplicial manifolds i.e. causal tri- angulations. Analysis of the data from numerical Monte-Carlo simulations of CDT in 3+1 dimensions shows that behaviour of (4, 1) simplicial building blocks of spacetime can be very well de- scribed by an expansion of the classical minisuperspace model. The precise form of the discrete analogue of the minisuperspace action will be discussed. Furthermore, it will be presented that the remaining (3,2) simplices may also be successfully included in the semiclassical description, leading to the extended discrete action and that the consistency between the two frameworks exists.