

Abstract Submitted
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Proposed operator description of four dimensional Euclidean quantum gravity JENS KOEPLINGER — This talk will give a brief overview over an algebraic system proposed for first quantization, operator description of (four dimensional) Euclidean quantum gravity. While the approach in general is well supported in field theory [e.g. G. W. Gibbons, S. W. Hawking (ed): Euclidean Quantum Gravity. Singapore: World Scientific (1993)], existence of an operator-based pendant is generally presumed unlikely at best. With use of a non-associative, 16-dimensional algebra (conic sedenions, or complex octonions) a formulation of the Dirac equation with electromagnetic field can be obtained, and subsequently rotated from Minkowskian to Euclidean space-time. An overview over support for such approach to describe quantum gravity will be given. Suggestions for further investigation will be mentioned, together with the difficulty in predicting measurable effects from quantum gravity in general.

Jens Koeplinger

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