



FRIEDRICH-ALEXANDER
UNIVERSITÄT
NATURWISSENSCHAFTLICHE
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Institut für Theoretische Physik III
Lehrstuhl für Quantengravitation

Prof. Dr. Thomas Thiemann



Seminar at the Institute for Theoretical Physics III Chair of Loop Quantum Gravity



Speaker: John Huerta, PhD (Australian National University)
Date & Start: Wednesday, 23rd of November 2011 at 6:00 p.m. s. t.
Location: SR 02.729
Title: **'Superstrings, higher gauge theory, and
division algebras.'**

Abstract:

"Recent work on higher gauge theory suggests the presence of 'higher symmetry' in superstring theory. Just as gauge theory describes the physics of point particles using Lie groups, Lie algebras and bundles, higher gauge theory is a generalization that describes the physics of strings and membranes using categorified Lie groups, Lie algebras and bundles. In this talk, we will summarize the mathematics of a higher gauge theory. We then show how to construct the categorified Lie algebras relevant to superstring theory by a systematic use of the normed division algebras. At the end, we will touch on how this leads to a categorified supergroup extending the Poincare supergroup in the mysterious dimensions where the classical superstring makes sense---3, 4, 6 and 10."