LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

ARNOLD SOMMERFELD CENTER FOR THEORETICAL PHYSICS

Arnold Sommerfeld Lecture Series

Professor Hermann Nicolai

MPI for Gravitational Physics, Golm

Fields and Strings Seminar:

Octonions and Quantum Gravity

The mini-superspace quantization of D=11 supergravity is equivalent to the quantization of an E10/K(E10) coset space sigma model, when the latter is restricted to the E10 Cartan subalgebra. As a consequence, the wavefunctions solving the associated Wheeler-DeWitt equation involve automorphic (Maass wave) forms of a novel type under the octonionic modular group $PSL_2(O)$. Besides its relevance to unification and the non-perturbative quantization of M Theory, this approach also offers some interesting new perspectives on some long-standing issues in canonical quantum gravity.

Thursday, 1st July 2010, 16:15 h, Room 348 / 349, Theresienstr. 37, LMU

Prof. D. Lüst