

Quantum field theory meets gravity

DESY THEORY WORKSHOP

HELMHOLTZ
RESEARCH FOR GRAND CHALLENGES

Quantum field theory meets gravity



24 - 27 September 2019
DESY Hamburg, Germany

Contribution ID: 15

Type: **not specified**

BPS and non-BPS supergravity solutions through bi-spinors

Wednesday, 25 September 2019 17:35 (20 minutes)

Spinor bilinears have played an important role in classification of supergravity vacuum solutions. In this talk I will present a novel reformulation of supersymmetry conditions for type II theories in terms of spinor bilinears without assuming any factorization of space-time. These bispinors can be used to define brane calibrations, namely differential forms whose integrals measure minimal energies, and I will show how supersymmetry can be rephrased in terms of calibration conditions.

I will continue by presenting an application of these techniques to the classification of $\text{Mink}_4 \times S^2$ solution in type II and M-theory, which is a preliminary step to find new compact solutions which overcame Maldacena-Nunez no-go theorem. In the end I will discuss how the bispinors reformulation can be used in the classification of non supersymmetric solutions.

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Session Classification: Parallel Session: String & Mathematical Physics

Track Classification: Cosmology & Astroparticle Physics