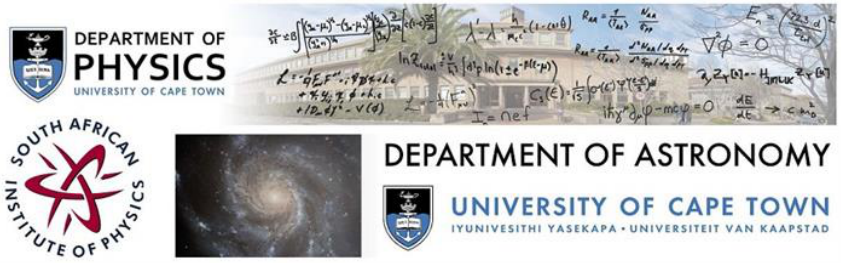

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Generalized Geometry and Hopf Twists

Thursday, 7 July 2016 10:20 (20 minutes)

Abstract content
   (Max 300 words)
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The Leigh-Strassler theories are marginal deformations of the N=4 SYM theory preserving N=1 Supersymmetry. As such they admit a Hopf algebra structure which is a quantum group deformation of the SU(3) structure of the R-symmetry of N=4 SYM. In this presentation we discuss how we reproduced the beta-deformed theory, a subset of the Leigh-Strassler theories, from the Hopf twist approach and how we investigated the twist manifests itself on the gravity dual by defining a star product between chiral superfields of the beta-deformed field theory. The treatment on the gravity side was done in the Generalized Geometry framework. This star product was then used to deform the pure spinors of six-dimensional flat space and from the deformed spinors we obtain an N=2 solution of Supergravity. The Lunin-Maldacena background dual to the beta-deformed theory was recovered when a stack of D3-branes was introduced in this N=2 solution. Alongside the beta-deformed theory we considered a unitarily equivalent theory, which we refer to as a w-deformed theory. In this approach the role of the twist is transparent from the field theory to the gravity dual, making it useful in constructing backgrounds dual to the full Leigh-Strassler family of theories.

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