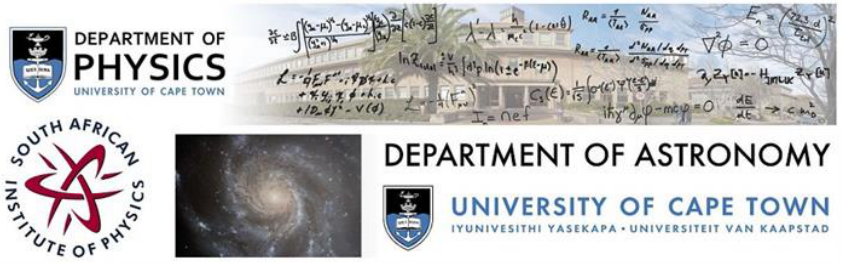

Contribution ID: **166** Type: **Oral Presentation**

Anomalous Dimensions of Heavy Operators from Magnon Energies

Thursday, 7 July 2016 11:30 (20 minutes)

Abstract content
   (Max 300 words)
Formatting &
Special chars

We propose operators with definite scaling dimension, dual to submaximal giant gravitons.
Our analysis makes heavy use of techniques using group representation theory.
The systems we study consist of strings suspended between maximal and submaximal giant gravitons and are described using spin chains with boundaries.
The system enjoys an su(2|2) symmetry which determines the anomalous dimensions in the gauge theory.
Complete agreement with energies computed in the dual string theory is demonstrated.
Further, the symmetry determines the reflection/scattering matrices for boundary and bulk magnons.
The resulting S-matrix passes a number of highly non-trivial checks.
The boundary condition on the open spin chain is inconsistent with the Yang-Baxter equation so that ultimately the system is not integrable.

Apply to be
 considered for a student
   award (Yes / No)?

Yes

Level for award
 (Hons, MSc,
   PhD, N/A)?

PhD

Main supervisor (name and email)
and his / her institution

Prof. Robert de Mello Koch
robert@neo.phys.wits.ac.za
University of the Witwatersrand

Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

No

Please indicate whether
this abstract may be
published online
(Yes / No)

Yes

Primary author: Mr HASINA TAHIRIDIMBISOA, Nirina Maurice (University of the Witwatersrand)

Co-authors: Mr MATHWIN, Christopher (University of the Witwatersrand); Prof. DE MELLO KOCH, Robert (University of the Witwatersrand)

Presenter: Mr HASINA TAHIRIDIMBISOA, Nirina Maurice (University of the Witwatersrand)

Session Classification: Theoretical and Computational Physics (1)

Track Classification: Track G - Theoretical and Computational Physics