



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Contribution ID: 97

Type: Oral Presentation

## Two Loop Dilatation Operator in $N=4$ SYM

Thursday, 12 July 2012 14:50 (20 minutes)

### Abstract content (Max 300 words)

In previous literature it has been shown that the dilatation operator of  $N=4$  super Yang-Mills theory is integrable at one loop in the large  $N$  non-planar limit. We attempt to calculate the action of the two loop dilatation operator of this theory in order to investigate whether it is also integrable.

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

yes

### Level for award (Hons, MSc, PhD)?

PhD

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

R. de Mello Koch: robert@neo.phys.wits.ac.za  
NITHEP; University of the Witwatersrand

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

no

**Primary authors:** Mr MOHAMMED, Badr Awad Elseid (University of the Witwatersrand); Mr KEMP, Garreth (University of the Witwatersrand); Prof. DE MELLO KOCH, Robert (National Institute for Theoretical Physics; University of the Witwatersrand); Ms SMITH, Stephanie (University of the Witwatersrand)

**Presenter:** Ms SMITH, Stephanie (University of the Witwatersrand)

**Session Classification:** Theoretical

**Track Classification:** Track G - Theoretical and Computational Physics