

# SAIP 2011



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## **The Giant Graviton Oscillator**

Thursday 14 Jul 2011 at 09:00 (00h30')

### **Content :**

$N=4$  SYM theory has been extensively studied in the planar limit. An important result is that the planar dilatation operator can be mapped to the Hamiltonian of an integrable system. In this talk we study certain large  $N$  (but not planar) limits of the theory. We argue that the dilatation operator remains integrable: it reduces to a set of decoupled harmonic oscillators. This challenges claims that integrability is spoiled by non-planar corrections. We argue that the decoupled oscillators that arise describe the vibration modes of a quantum membrane.

### **Level (Hons, MSc, PhD, other)? :**

other

### **Consider for a student award (Yes / No)? :**

no

### **Short Paper :**

no

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**Session classification** : Theoretical

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

**Type** : Oral Presentation