



Contribution ID: 162

Type: not specified

Supersymmetry non-renormalization theorem from a computer and the AdS/CFT correspondence

Thursday, 17 June 2010 15:10 (20 minutes)

We perform Monte Carlo simulation of the plane-wave matrix model or the BMN matrix model, which has 16 supercharges. The model has many degenerate supersymmetric vacua, and by picking up a particular one, we can obtain 4d $N = 4$ super Yang-Mills theory on $R^4 \times S^3$ in the planar limit based on the idea of a novel large- N reduction. We study correlation functions of non-extremal operators, and find clear evidence that the supersymmetry non-renormalization theorem is at work for two-point and three-point functions for general backgrounds. This suggests that the theorem actually holds in a wide class of supersymmetric theories other than 4d $N = 4$ super Yang-Mills theory, in which it was already proven. For four-point functions, we observe small violation of the non-renormalization property, which is consistent with a result obtained from the AdS/CFT correspondence.

Please, insert your presentation type (talk, poster)

talk

Primary author: HONDA, Masazumi (SOKENDAI,KEK)

Co-authors: Prof. TSUCHIYA, Asato (Shizuoka University); Dr ISHIKI, Goro (CQeST); Prof. NISHIMURA, Jun (SOKENDAI,KEK); Dr KIM, Sang-Woo (KEK)

Presenter: HONDA, Masazumi (SOKENDAI,KEK)

Session Classification: Parallel 47: Theoretical developments

Track Classification: Theoretical developments