SEMPARIS – Séminaires en région parisienne

http ://string.lpthe.jussieu.fr/semparis/

Strings, integrability and beyond

Vendredi 9 Mars 2018, 14 :30
LPTENS, LPTENS Library
Domaines : hep-th

Titre : *Quantum Spectral Curve and Structure Constants in N = 4 SYM : Cusps in the Ladder Limit*

Orateur : **Nikolay Gromov (King's College London)**

Résumé : *We give a pedagogical introduction to the Quantum Spectral Curve of N=4 SYM and discuss its applications to correlation functions. We find a massive simplification in the non-perturbative expression for the structure constant of Wilson lines with 3 cusps when expressed in terms of the key Quantum Spectral Curve quantities, namely Q-functions. Our calculation is done for the configuration of 3 cusps lying in the same plane with arbitrary angles in the ladders limit. This provides strong evidence that the Quantum Spectral Curve is not only a highly efficient tool for finding the anomalous dimensions but also encodes correlation functions with all wrapping corrections taken into account to all orders in the 't Hooft coupling. We also show how to study the insertions of scalars coupled to the Wilson lines and extend our result for the spectrum and the structure constant for these states. We discuss an OPE expansion of two cusps in terms of these states. Our results give additional support to the Separation of Variables strategy in solving the planar N = 4 SYM theory.*