

Title: Integrable aspects of the AdS/CFT duality

Abstract:

I will review the integrable aspects of the duality which relates IIB superstrings on $AdS_5 \times S^5$ to the maximally supersymmetric 4D gauge theory. As the gauge theory is conformal it can be completely characterized by its two and three point functions. The two-point functions are determined by the scaling dimensions, which correspond to the energies of string states. These scaling dimensions also fix the space-time dependence of the three-point functions upto a coupling constant dependent quantity called the three-point coupling, which is related to the annihilation and creation of string states (the string vertex). I will explain, how integrability of the AdS/CFT correspondence can be used to calculate the scaling dimensions and the three-point couplings.