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One point functions in AdS/dCFT

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AdS/CFT correspondence is one of the major developments in theoretical physics, but lack of rigorous proof. It has been showed that planar sector of AdS/CFT can be solved completely, by the miracle tool called *integrability*. We are mainly focusing on the AdS/dCFT, a defected version of AdS/CFT. On the field theory side the full symmetry of $\mathcal{N} = 4$ Super Yang-Mills theory is broken, and on the gravitational side a potential solution is probe brane system. Such a system can be solved completely by the conformal bootstrap given the knowledge of defect conformal data. The one point functions in dCFT can be obtained by the overlap between MPS (matrix product stateS) and Bethe eigenstates. Our thesis studies the $(SU(3), SO(3))$, $(SO(6), SO(3) \times SO(3))$ sector in D3-D5 probe brane system and $(SO(6), SO(5))$ sector in D3-D7 probe brane system using the twisted Yangian algebra.

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Field of study

Quantum Physics

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