Integrability treatment of AdS/CFT orbifolds

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The integrability program provides powerful tools to determine the spectrum of holographic theories. The development of these tools and the generalisation to a wider scope of theories go hand in hand. In particular, non-supersymmetric versions of AdS/CFT can be accessed, which is a first step towards more realistic models of QCD and could shed some light on SUSY-breaking mechanisms needed for phenomenology. We discuss the simple case of orbifolds of $AdS_5 \times S^5$ and the dual $\mathcal{N} = 4$ super Yang-Mills theory. We explain how the orbifolding features in the various integrability techniques and demonstrate this for two simple \mathbb{Z}_2 -orbifolds. When we break supersymmetry completely, we expect tachyons to appear on both sides of the duality and we comment on their implications and potential matching through AdS/CFT.

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