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Mirror dual string sigma models

Integrability plays an important role in understanding AdS/CFT. On the string side exact results are typically found through so-called mirror models, which arise by doubly Wick rotating the light cone world sheet theory of a string, as I will briefly review. I will give a direct physical interpretation to such mirror models, coming about naturally when considering a one parameter integrable deformation of the superstring on $AdS_5 \times S^5$. Among the many interesting features of this family of models, I will focus on its ‘mirror duality’, whereby a double Wick rotation simply maps one theory to a particular cousin. In the undeformed limit this gives us an interesting space we can call the mirror version of $AdS_5 \times S^5$. This space can be completed to a non-supersymmetric solution of IIB supergravity, which nonetheless results in a string with some supersymmetry.

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