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Integrability from Emergent Gauge Theory

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We study excitations of LLM geometries, formed by backreaction of a condensate of giant gravitons. Excitations of the condensed branes are open strings, which give rise to an emergent Yang-Mills theory at low energy. The dynamics of the planar limit of these emergent gauge theories match the planar N=4 super Yang-Mills. Three observations support this conclusion: (i) there is an isomorphism between operators of planar N=4 super Yang-Mills and the planar emergent gauge theory, (ii) the OPE coefficients of the planar emergent gauge theory vanish and (iii) the planar spectrum of anomalous dimensions of the emergent gauge theory is that of planar N=4 super Yang-Mills.

Summary

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