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Live Talk 3: Spinning Cosmological Bootstrap [Hayden Lee]

Tuesday 8 September 2020 14:00 (1 hour)

Abstract: In this talk, I will describe recent developments in the bootstrap approach to cosmological correlators, extended to correlators of massless spinning particles. Interactions of massless particles are highly constrained by gauge invariance, which manifests itself as current conservation on the boundary of de Sitter space. I will show that boundary spinning correlators satisfy current conservation only if different channels have correlated couplings to each other, allowing us to rediscover bulk facts such as charge conservation and the equivalence principle from a purely boundary perspective. Moreover, the constraints on the allowed singularities of massless spinning correlators and their residues are often strong enough to fix the answers completely. Based on this, I will describe an efficient way to construct spinning cosmological correlators in terms of lower-point building blocks.