

## Light spin-3/2 particles need gravity (and broken SUSY)

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We study the EFT of a Majorana massive spin- $\frac{3}{2}$  particle through consistency conditions derived from unitarity, causality and Lorentz invariance. We show that its mass cannot be parametrically lighter than the UV cutoff, unless all the interactions, both in the transverse and longitudinal sector, are tuned to gravity. Then we focus on the decoupling limit, which effectively projects out the longitudinal modes and gives a theory of goldstinos. We study the allowed parameter space, identifying relevant UV completions, with both finite and infinite towers of higher-spin states. The necessity of gravity for consistency and the tuning of the couplings point to theories with spontaneously broken supersymmetry as the only consistent UV completions for a parametrically light spin- $\frac{3}{2}$  particle.

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