Phenomenology 2022 Symposium: From Virtual to Real



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Holographic dilaton action: the a-term

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Spontaneously broken conformal sectors are ubiquitous in model-building. Despite this, little is understood about the Lagrangian for the dilaton, the Goldstone boson of broken scale invariance. We investigate the higher-derivative terms in the dilaton action, focusing on the unique four-derivative term allowed by symmetry. This term is closely related to the famous a-theorem, and we argue it can actually be calculated in a holographic realization of spontaneously broken scale invariance. We also discuss implications for model building and dilaton phenomenology.

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