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Extending effective field theories to constrain generic light hidden sectors

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Hidden sectors can help explain many important hints for new physics, but the large variety of viable models is a challenge for the model-independent interpretation of experimental light hidden particle searches. Standard techniques such as simplified models or effective field theories (EFTs) typically envision minimalist hidden sectors with only a single new particle, and it is not always clear how to map the resulting constraints on to realistic standard model (SM) extensions. Extending the EFT approach, we present techniques published in 2105.06477 and 2203.02229 that help interface these minimalist EFTs with realistic hidden sectors, and show how to streamline the computation of hidden particle production rates by factorizing them into i) a model-independent SM contribution, and ii) a observable-independent hidden sector contribution.

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Collaboration / Activity

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