LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS (LEPP)

Theory Seminar

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Effective Field Theory of Gravity to All Orders

We construct the general effective field theory of gravity coupled to the Standard Model of particle physics, which we name GRSMEFT. Our method allows the systematic derivation of a non-redundant set of operators of arbitrary dimension with generic field content and gravity. We explicitly determine the pure gravity EFT up to dimension ten, the EFT of a shift-symmetric scalar coupled to gravity up to dimension eight, and the operator basis for the GRSMEFT up to dimension eight. Extensions to all orders are straightforward.

Wednesday, October 2, 2019
2:00pm
401 Physical Sciences Building