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Dark Matter Effective Theory

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A large number of models for Dark Matter have been put forward in recent years and compared with experimental data. A true model-independent analysis of the possible interaction terms is still not on the horizon. I will present the first step towards a future comprehensive analysis which starts with constructing a well defined effective theory for Dark Matter. We can now use our results for direct and indirect searches as well as for the study of Dark Matter genesis. Our approach allows for systematic improvements via quantum corrections, at the effective Lagrangian level. While classifying our terms we made the discovery of the existence of interesting flavor-violating operators in the dark sector awaiting to be tested experimentally.

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