

Bayesian analysis of current direct detection experiments

Recently there has been a huge activity in the dark matter direct detection field, with the report of an excess from CoGeNT and Cresst, the two events in the CDMS-II along with the annual modulated signal of DAMA/Libra and the strong exclusion bound from Xenon100. We analyse these results within the framework of bayesian inference. Indeed bayesian methods are well suited for marginalizing over the experimental systematics and the background. We present the results for spin-independent interaction on nucleus with particular attention to the low dark matter mass region and the compatibility between experiments. In the same vein we also investigate the impact of astrophysical uncertainties on the WIMP preferred parameter space within the class of isotropic dark matter velocity distributions.

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