

# Halo Independent Comparison of Direct Dark Matter Detection Data

*Tuesday, 10 September 2013 16:20 (20 minutes)*

Direct detection DM searches are plagued with astrophysical uncertainties, like the unknown DM velocity distribution and its local density. To circumvent this problem, a way to present direct detection data without making assumptions on the DM halo has been formulated and recently extended to any (elastic or inelastic) DM-nuclei interaction.

We apply this formalism to study the compatibility of the different experimental results, for standard spin-independent contact interaction (in both the isospin-conserving and isospin-violating case), as well as for a DM with anomalous magnetic moment. We focus on the light WIMP case ( $\sim 10$  GeV) to compare the positive signals of DAMA, CoGeNT, CRESST and the recent CDMS silicon data and the negative results by XENON and other experiments. The tension in the DM interpretation of the different experiments persists independently of the halo properties.

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**Session Classification:** Dark Matter IV

**Track Classification:** Dark Matter