

Direct detection of exothermic dark matter with light mediator

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In this talk, we study the possible models trying to reconcile the tension between the CDMS-Si signals and null experiments. In particular, we focus on the models with the following properties: isospin-violating couplings, exothermic scatterings, and/or a light mediator. In the light of the latest constraints from LUX, PandaX-II, XENON1T, CDMSlite and PICO-60, we find that, for almost all the considered models, the predicted CDMS-Si signal regions are either severely constrained or completely excluded, including the previously promising Xe-phobic exothermic DM models with/without a light mediator.

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