

Abstract Submitted
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Measurements of low energy nuclear recoil tracks and its implications for dark matter searches¹ CHRISTINA HAGEMANN, MICHAEL GOLD, MARTIN HOEFERKAMP, DINESH LOOMBA, University of New Mexico — The direction of dark matter particles passing through the solar system is expected to have an anisotropy due to our own motion through the galaxy. The directionality associated with this WIMP wind is one of the strongest signatures for dark matter detection. We show how this directional signal can be measured in our detector which uses low-pressure gas as the target material. Just how well the directionality can be measured is limited by detector resolution and by uncertainties in our knowledge of the energy-loss of low energy nuclear recoils resulting from WIMP interactions. Here we describe preliminary results from ongoing R&D of nuclear recoil tracks in the energy range of interest for WIMP interactions.

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