

## Directional Dark Matter Searches

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We consider the use of directionality in the search for monoenergetic sub-GeV neutrinos arising from the decay of stopped kaons, which can be produced by dark matter annihilation in the core of the Sun. When these neutrinos undergo charged-current interactions with a nucleus at a neutrino detector, they often eject a proton which is highly peaked in the forward direction. The direction of this track can be measured at DUNE, allowing one to distinguish signal from background by comparing on-source and off-source event rates. We find that directional information can enhance the signal to background ratio by up to a factor of 5.

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