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## Disentangling Sub-GeV DM from the Diffuse Supernova Neutrino Background using Hyper-Kamiokande

*Tuesday 19 July 2022 19:00 (1 hour)*

The Hyper-Kamiokande (HyperK) experiment, currently under construction, is expected to conduct precise measurements of the Diffuse Supernova Neutrino Background (DSNB). This requires all backgrounds to be well understood. A possible source of background that has not been considered so far is that from sub-GeV dark matter (DM) which annihilates into neutrinos. We conduct dedicated simulations of the HyperK detector and quantify the extent to which this can happen. We find that the presence of DM could alter the extraction of the correct values of the parameters of interest for DSNB physics. Since the DSNB is an isotropic signal, and DM originates primarily from the Galactic Centre, we show how this effect can be mitigated against with an on-off analysis.

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