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Dark Matter Signals and Constraints from keV to GeV

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The possibility of dark matter residing in the neutrino sector remains of high interest, being probed by X-ray astronomy as well as laboratory searches. I will review candidate structure-formation and X-ray signals and constraints on keV-scale sterile neutrino dark matter. Much interest also remains at a factor of a million higher energy, with the Galactic Center Excess (GCE) of gamma-ray emission that may be consistent with dark matter annihilation at the GeV-scale. I will show: (1) the limitations of recent analyses that find a dark matter preference for the GCE, and (2) employing the latest models of diffuse emission and stellar-bulge associated populations makes them strongly preferred over a dark matter source.

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