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## Supernova constraint on the light dark particles

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The well-established supernova bound on sub-GeV particles in the dark sectors has been applied to various dark sector candidates, including axion, dark photon, sterile neutrinos, etc. Recently, we found that on one hand one can extend the supernova bound by considering the decay of dark particles in the stellar envelope that can add energy to the explosion of the supernova [1]. On the other hand, if light dark sector particles have sizable interactions between themselves, this self-interaction can result in self-trapping of dark sector particles to evade the supernova bound [2].

[1] A. Sung, H. Tu, M.-R. Wu, Phys.Rev.D 99 (2019) 12, 121305.

[2] A. Sung, G. Guo, M.-R. Wu, Phys.Rev.D 103 (2021) 10, 103005.

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