

Hybrid star with non interacting dark matter fermion core

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In this work we study the influences of the dark matter fermion mass on the structure of the hybrid star. We fixed the Fermi momentum of dark matter and considered the mass of dark matter from 0.1 GeV to 100 GeV, since the mass of dark matter is more uncertain than its density approximation related to ordinary matter. Further, we used the Maxwell construction to make the phase transition between DD2 EoS and vMIT EoS. The implementation of DM is made in a simple way, i.e. considering it as a fermion with mass M_x without interactions. Finally, we compared our results with the latest observed masses $> 2M_\odot$ and similar approaches considering interactions in the current literature.

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