

Melting Domain Walls, NANOGrav Gravitational Waves and Dark Matter

Friday 19 July 2024 15:15 (15 minutes)

I will discuss cosmological domain walls which are described by tension red-shifting with the expansion of the Universe so that this network eventually fades away completely. These melting domain walls emit gravitational waves with the low-frequency spectral shape corresponding to the spectral index $\gamma=3$ favoured by the recent NANOGrav 15 yrs data. This scenario involves a feebly coupled scalar field, which can serve as a promising dark matter candidate. This ultra-light dark matter has mass below 0.01 neV which is accessible through planned observations thanks to the effects of superradiance of rotating black holes. This talk is based on recent works: arXiv:2104.13722, arXiv:2112.12608 and arXiv:2307.04582.

Alternate track

1. Dark Matter Detection

I read the instructions above

Yes

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