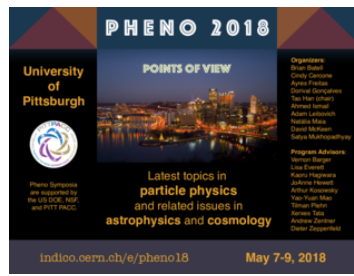


Phenomenology 2018 Symposium



Contribution ID: 618

Type: parallel talk

Muti-messenger Probes of New Physics: Dark Matter

Tuesday 8 May 2018 14:30 (15 minutes)

Dark matter (DM) that implodes neutron stars (NSs) may explain the paucity of pulsars in the Milky Way galactic center, the source of r-process elements, and the origin of fast-radio bursts. We identify new astrophysical signatures of NS-implosion DM, which could decisively test these hypotheses in the next few years.

The use of distribution of NS mergers in the galaxies, in particular, will allow us to probe DM-nucleon interaction cross-sections 4 to 10 orders of magnitude better than the direct detection experiments in a few-years timescale.

We also propose other direct and indirect phenomena including solar-mass black holes from NS collapse, “Quiet Kilonovae”, and “Black Mergers” from the implosions.

This talk is based on arXiv:1706.00001 (PRD 2018)

Summary

Astro-Particle

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Presenter: TSAI, Yu-Dai (Cornell University)

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