

Dark sector visible signals in neutron star mergers

Thursday, 17 June 2021 09:40 (40 minutes)

In this talk I will present new ways to detect dark sectors through transient visible signals following a neutron star merger. Focusing on the dark photon scenario, I will show that the merger remnant can produce a very large flux of dark photons, and explore the visible signatures coming from their decays. The most promising signal is a bright and short burst of MeV photons produced by the decay products. This can be used to probe a large portion of unexplored parameter space, including much of the unconstrained parameter space for freeze-in dark matter models with interactions mediated by the dark photon.

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