

Probing particle physics and cosmology with cosmic strings and GWs

Monday, July 12, 2021 4:10 PM (40 minutes)

In this talk we will first review the LIGO-Virgo O3 constraints on cosmic strings, both from the stochastic GW background (SGWB) and from a burst search. We will then go beyond the standard cosmic string scenario, and discuss (i) the effects of possible particle emission from cusps and kinks, both on the loop distribution as well as on different observables (the stochastic GW background as well as the gamma-ray background) (ii) current carrying strings, and the formation of vortons which can act as a dark matter component. Finally, we will comment on how the SGWB from cosmic strings can be used to probe particle physics, and also cosmology, beyond the standard models, and at energy scales much above those of particle accelerators.

Presenter: STEER, Daniele

Session Classification: Topological Defects