Contribution ID: **1318** Type: **Parallel session talk**

Gravitational waves from composite dark sectors

Friday 19 July 2024 15:45 (15 minutes)

We study under which conditions a first-order phase transition in a composite dark sector can yield an observable stochastic gravitational-wave signal. To this end, we employ the Linear-Sigma model featuring Nf = 3, 4, 5 flavours and perform a Cornwall-Jackiw-Tomboulis computation also accounting for the effects of the Polyakov loop. The model allows us to investigate the chiral phase transition in regimes that can mimic QCD-like theories incorporating in addition composite dynamics associated with the effects of confinement-deconfinement phase transition. A further benefit of this approach is that it allows to study the limit in which the effective interactions are weak. We show that strong first-order phase transitions occur for weak effective couplings of the composite sector leading to gravitational-wave signals potentially detectable at future experimental facilities.

Alternate track

I read the instructions above

Yes

Authors: Prof. SANNINO, Francesco (Southern Denmark U.); Dr REICHERT, Manuel (Sussex U.); PASECHNIK, Roman (Lund university); Dr WANG, Zhi-Wei (UESTC, Chengdu)

Presenter: PASECHNIK, Roman (Lund university)

Session Classification: Astro-particle Physics and Cosmology

Track Classification: 08. Astro-particle Physics and Cosmology