

NEW PERSPECTIVES IN
CONFORMAL FIELD THEORY AND GRAVITY

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26 - 29 September 2023 DESY Hamburg, Germany



Contribution ID: 307

Type: **not specified**

Predicting dark matter and gravitational waves signals from a dark Higgs mechanism

Wednesday 27 September 2023 15:10 (20 minutes)

The next generation of gravitational wave (GW) detectors open up a new window to probe physics beyond the Standard Model in the early universe. An intriguing possibility are first order phase transition in a dark sector giving rise to a stochastic GW background. In this talk I will discuss GW signals from a dark sector with a spontaneously broken gauge symmetry and a stable dark fermion. Requiring the observed relic abundance of dark matter constrains the GW signal frequency to lie within the LISA sensitivity range. Finally I will consider a scenario with feeble coupling between the dark and Standard Model sector, allowing the temperatures of the two sectors to evolve independently during the phase transition.

Summary

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Session Classification: Parallel Session Wednesday: Gravitational waves/phase transitions session

Track Classification: Cosmology & Astroparticle Physics