Phenomenology 2019 Symposium



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Observable Gravitational Waves from Axion-Like Particles

Monday 6 May 2019 14:15 (15 minutes)

We consider a generic framework for axion-like particles (ALPs) by introducing a complex scalar singlet field. The breaking of the corresponding global U(1) symmetry at some high scale leads to a (pseudo) Goldstone boson that is identified as the ALP. We show that if the complex scalar field is coupled to the Standard Model Higgs boson, there exists a large parameter space for which the U(1) breaking is strongly first order, thereby producing stochastic gravitational waves that are potentially observable in current and future gravitational-wave detectors.

Summary

Presenter: Dr DEV, Bhupal (Washington University in St. Louis) **Session Classification:** Axions & ALPs