

Phenomenology 2021 Symposium



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New spin 0 physics from TeV to THz

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Fundamental spinless particles are theoretically common yet experimentally rare. This talk presents an overview of my recent phenomenology program probing enigmatic spin 0 dynamics sensitive to new physics. The Higgs self-coupling may remarkably become directly accessible soon but LHC challenges demand continued innovation. Meanwhile, scalar leptons elegantly reconcile the muon $g-2$ tension and dark matter, and colliding light could enable decisive searches. Tau $g-2$ is equally important but often overlooked, where new physics modifications generically involve the Higgs field in SMEFT. Finally, axion searches are expanding beyond cavity haloscopes with interesting R&D proposals for broadband sensitivity near the THz window.

Summary

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