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Gravitational Imprints of Left-Right Symmetry Breaking

Thursday 31 August 2023 15:00 (15 minutes)

Restoration of left-right symmetry at high energy scales provides a well-motivated extension of the Standard Model, which has been scrutinized over the past few decades, chiefly in context of collider experiments. In my talk I will present a complementary approach and investigate whether these models can be probed via the search for a stochastic gravitational wave background induced by the left-right phase transition. A prerequisite for this kind of gravitational wave production is a first-order phase transition, occurrence of which can be found in a significant portion of the parameter space. Although the produced gravitational waves are typically too weak for a discovery at any existing or planned detector, upon examining correlations between all relevant terms in the scalar potential, parameters leading to observable signals can be identified. This indicates that the minimal left-right symmetric model features another powerful probe which can lead to either novel constraints or remarkable discoveries in the near future.

Submitted on behalf of a Collaboration?

No

Author: GRAF, Lukas (University of California, Berkeley)

Presenter: GRAF, Lukas (University of California, Berkeley)

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