

Probing BSM physics at eLISA

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Status of eLISA; Gravitational waves from first-order phase transitions; BSM physics with first-order phase transitions.

Summary

A first-order phase transition produces gravitational waves and such a transition only occurs if there is physics beyond the Standard Model (SM). In this sense gravitational wave experiments can be considered as detectors of new physics. In this talk we review the status of the eLISA experiment and we analyse its capabilities for probing first-order phase transitions. We demonstrate that in some cases eLISA is able to discover new physics arising at the electroweak scale or even much above. In particular, by considering an illustrative supersymmetric model with a first-order electroweak phase transition, we determine the detection potential of eLISA in parameter regions that are hard to probe at the LHC.

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