

# Phenomenology 2015 Symposium



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## Higgs Relaxation Leptogenesis

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The recent observation of a relatively light Higgs boson at the LHC suggests that the Standard Model potential rises relatively slowly at large vacuum expectation values, and may even develop a second minimum. In such cases, the Higgs boson may develop a large vacuum expectation value during inflation; subsequently, it will relax to its equilibrium value. During this epoch, the time-dependent Higgs condensate can create an effective chemical potential for the lepton number, leading to a generation of the lepton asymmetry in the presence of some large right-handed Majorana neutrino masses. The electroweak sphalerons redistribute this asymmetry between leptons and baryons, accounting for the observed cosmological matter-antimatter asymmetry.

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