

# Standard Model thermodynamics across the electroweak crossover

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Within the Standard Model there is no electroweak phase transition which could account for the non-equilibrium physics needed for Baryogenesis. Nevertheless, at temperatures around 160 GeV some interesting features in the equation of state and other thermodynamical functions, e.g. the heat capacity, can be observed. These features of the Standard Model background could have an impact on non-equilibrium BSM physics, e.g. leptogenesis scenarios or dark matter particle production, taking place at this crossover temperature. In a perturbative three-loop computation and by using already existing lattice simulation data in a dimensionally reduced effective field theory we estimate the relevant thermodynamical functions across the crossover.

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