

# High temperature limit of the Standard Model due to gauge group contraction

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The high-temperature limit of Standard Model generated by the contractions of gauge group  $SU(2)$  of Electroweak Model and gauge group  $SU(3)$  of Quantum Chromodynamics is discussed. Contraction parameters of both gauge groups are taken identical and tending to zero when temperature increase. Properties of the elementary particles change drastically at the infinite temperature: all particles lose masses, all quarks have only one color degree of freedom, particles of different kind do not interact. The Standard Model passes in this limit through several stages, which are distinguished by the powers of contraction parameters. For any stage the intermediate models with the exact Lagrangians are presented. This could solve the hierarchy problem. The developed approach can be considered as the evolution of Standard Model in the early Universe starting from Planck scale.

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