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**Higgs mechanism with non-parallel vacuum and physical field**

JAIME BESPROSVANY, Instituto de Fisica, Universidad Nacional Autonoma de Mexico — Spontaneous symmetry breaking of scalar potentials provide degenerate vacuum configurations of fields. We investigate the Higgs mechanism in gauge theories with a non-aligned physical field with the vacuum. We calculate the effective potential with corrections to first order in the coupling constant of a renormalizable fourth-power scalar potential, including a derived third-power contribution. We find that these non-aligned configurations are possible for potentials with non-zero second-power term. We discuss applications of this mechanism in standard-model extensions that provide CP-violating phase generation, and restrictions on the mass of the Higgs particle.

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