

Exceptional Point of the Heavy Higgs System

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Abstract content

We analyse the mixing and degeneracy of the isolated doublet of neutral, heavy Higgs bosons, H_2 and H_3 , of the Minimal Supersymmetric Standard Model with CP-Violation. We find a set of Lagrangian parameter values for which the isolated doublet of mass eigenstates is degenerate. At degeneracy, the physical masses as functions of the Lagrangian parameters have a rank one algebraic branch point, and the real and imaginary parts of the masses have branch cuts that start at the same exceptional point, but extend in opposite directions in parameter space. Associated with this singularity, the propagator of the mixing H_2 - H_3 neutral Higgs system has one double pole in the complex s -plane.

Summary

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