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# The Standard Model lifetime is slightly shorter

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The electroweak vacuum of the Standard Model is unstable at very high energies due to the running of the Higgs quartic coupling. Since a vacuum decay rate is a fundamental quantity and the Standard Model parameters are precisely measured, its accurate determination is important. We reexamined the computation of vacuum decay rates at the one-loop level and found that the degeneracy factor of the gauge transverse modes was incorrect in the previous literature. We have derived the correct basis set and the degeneracy factor, and updated the vacuum decay rate in the Standard Model. We found that the decay rate becomes 10^6 times faster than the wrong computation: the lifetime of the Universe is now determined as ~10^{871} Gyr.

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