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# The Higgs decay into two photons in the Standard Model Effective Field theory

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Assuming that new physics effects are parametrized by the Standard-Model Effective Field Theory (SMEFT) written in a complete basis of up to dimension-6 operators,
we calculate the CP-conserving one-loop amplitude for the decay h->gamma+gamma in general R_xi-gauges. We use this gauge invariant amplitude and recent LHC data to check upon sensitivity to various Wilson coefficients entering from a more complete theory at the matching energy scale.
We present a closed expression for the ratio \mathcal{R}_{h->gamma+gamma}, of the Beyond the SM versus the SM contributions as appeared in LHC h->gamma+gamma searches.
With mild assumptions, we point out a set of possibilities for a field theory content at higher energies which may generate sizeable corrections in h->gamma+gamma amplitude.

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