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Bounding the Higgs width through interference effects

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I review an ongoing pheno study, in which my collaborators and I explore if the experimental bounds on the Higgs decay width could potentially be improved by exploiting interference effects of the $pp \rightarrow H \rightarrow \gamma\gamma$ signal with the $pp \rightarrow \gamma\gamma$ continuum background. We use particle-level simulated data using SHERPA and a complete likelihood analysis to derive the expected bound, and thus go beyond earlier findings where approximate bounds were derived using fixed-order predictions [Dixon, Li 1305.3854 (2013)].

Summary

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