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Higgs bbbar decay at NNLO and beyond : the uncertainties of QCD predictions

Monday, 3 November 2008 10:40 (40 minutes)

Different methods for treating the results of higher-order perturbative QCD calculations of the decay width of the Standard Model Higgs boson into bottom quarks are discusssed. Special attention is paid to the analysis of the M_H dependence of the decay width $\Gamma(H \to \bar{b}b)$ in the cases when the mass of b-quark is defined as the running parameter in the $\bar{M}S$-scheme and as the quark pole mass. The relation between running and pole masses is taken into account in the order α_s^4-approximation. The way of fixation of theoretical uncertainties of the f QCD predictions are fproposed. Thev results may be of interest in the process of matching with the results ofexisting NNLO Monte Carlo program to compute Higgs boson production at hadron colliders at NNLO

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