April 11, 2003

Title

Title cont.

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I. INTRODUCTION

Here comes the introduction and/or motivation.

II. MAIN PART

Here comes the main part which can consist of several sections.

An example of how to write a short equation:

$$\frac{\delta m_t}{m_t} = -\Big(\frac{\alpha_s}{4\pi}\Big)\mathcal{N}_t\Big(\frac{N}{2}-\frac{1}{2N}\Big)\Big(\frac{3}{\epsilon_{UV}}+4\Big)\ . \tag{1}$$

An example of how to write a long equation:

$$\begin{aligned}\sigma_{NLO} &= \sum_{q\bar{q}}\int dx_1 dx_2 \mathcal{F}_q^p(x_1,\mu)\mathcal{F}_{\bar{q}}^{\bar{p}}(x_2,\mu)\left[\hat{\sigma}_{LO}^{q\bar{q}}(x_1,x_2,\mu)+\hat{\sigma}_{virt}^{q\bar{q}}(x_1,x_2,\mu)+\hat{\sigma}'_{soft}(x_1,x_2,\mu)\right]\\ &+ \frac{\alpha_s}{2\pi}C_F\sum_{q\bar{q}}\int dx_1 dx_2\left\{\int_{x_1}^{1-\delta_s}\frac{dz}{z}\left[\mathcal{F}_q^p(\frac{x_1}{z},\mu)\mathcal{F}_{\bar{q}}^{\bar{p}}(x_2,\mu)+\mathcal{F}_q^{\bar{p}}(x_2,\mu)\mathcal{F}_{\bar{q}}^{p}(\frac{x_1}{z},\mu)\right]\right.\\ &\times\left.\hat{\sigma}_{LO}^{q\bar{q}}(x_1,x_2,\mu)\left[\frac{1+z^2}{1-z}\ln\left(\frac{s}{\mu^2}\frac{(1-z)^2}{z}\frac{\delta_c}{2}\right)+1-z\right]+(1\leftrightarrow 2)\right\}\\ &+\sum_{q\bar{q}}\int dx_1 dx_2 \mathcal{F}_q^p(x_1,\mu)\mathcal{F}_{\bar{q}}^{\bar{p}}(x_2,\mu)\,\hat{\sigma}_{hard/non-coll}(x_1,x_2,\mu)\ ,\end{aligned} \tag{2}$$

An example of how to include figures:

First of all, in Fig. 1 we show how at NLO the dependence on the arbitrary renormalization/factorization scale μ is significantly reduced. We use $M_h = 120$ GeV for illustration purposes. We note that only for scales μ of the order of $2m_t + M_h$ or bigger is the NLO result greater than the lowest order result at $\sqrt{s_H} = 2$ TeV.

An example of how to write tables:

III. SUMMARY

Here comes the summary and/or conclusions.

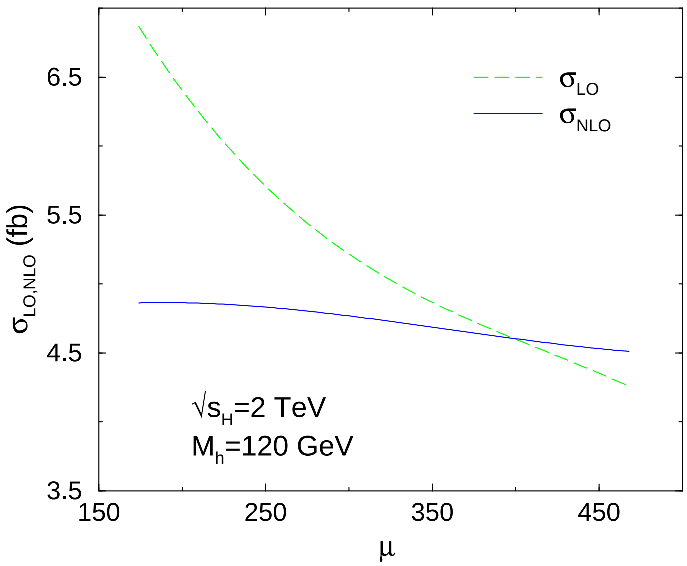

FIG. 1: Dependence of $\sigma_{LO,NLO}(p\bar{p} \to t\bar{t}h)$ on the renormalization/factorization scale μ, at $\sqrt{s_H} = 2$ TeV, for $M_h = 120$ GeV.

Acknowledgments

We are particularly thankful to Z. Bern and F. Paige for valuable discussions and encouragement. We would like to thank W. Giele, S. Keller, and W. Kilgore for very useful suggestions and insights. We are grateful to the authors of Ref. [1] for detailed comparisons of results prior to publication.

[1] W. Beenakker, S. Dittmaier, M. Krämer, B. Plümper, M. Spira and P. M. Zerwas, hep-ph/0107081.

[2] G. 't Hooft and M. Veltman, Nucl. Phys. B **153**, 365 (1979); G. Passarino and M. Veltman, Nucl. Phys. B **160**, 151 (1979).

[3] F. Bloch and A. Nordsieck, Phys. Rev. **52**, 54 (1937).

[4] T. Kinoshita, J. Math. Phys. **3**, 650 (1962).

M_h (GeV)	μ	σ_{LO} (fb)	$\bar{\sigma}_{LO}$ (fb)	σ_{NLO} (fb)
120	m_t	6.8662 ± 0.0013	5.2843 ± 0.0008	4.863 ± 0.029
	$m_t + M_h/2$	5.9085 ± 0.0011	4.5846 ± 0.0007	4.847 ± 0.024
	$2m_t$	4.8789 ± 0.0009	3.8252 ± 0.0006	4.691 ± 0.020
	$2m_t + M_h$	4.2548 ± 0.0008	3.3600 ± 0.0005	4.511 ± 0.017
150	m_t	3.4040 ± 0.0006	2.5811 ± 0.0005	2.355 ± 0.013
	$m_t + M_h/2$	2.8289 ± 0.0005	2.1668 ± 0.0004	2.315 ± 0.011
	$2m_t$	2.4007 ± 0.0004	1.8553 ± 0.0004	2.253 ± 0.010
	$2m_t + M_h$	2.0282 ± 0.0004	1.5813 ± 0.0003	2.147 ± 0.008
180	m_t	1.7605 ± 0.0003	1.3153 ± 0.0002	1.160 ± 0.007
	$m_t + M_h/2$	1.4142 ± 0.0003	1.0693 ± 0.0002	1.158 ± 0.005
	$2m_t$	1.2326 ± 0.0002	0.9390 ± 0.0001	1.132 ± 0.004
	$2m_t + M_h$	1.0096 ± 0.0002	0.7773 ± 0.0001	1.069 ± 0.004

TABLE I: Values of both σ_{LO} (calculated with LO $\alpha_s(\mu)$ and LO PDFs), $\bar{\sigma}_{LO}$ (calculated with NLO $\alpha_s(\mu)$ and NLO PDFs), and σ_{NLO} for different values of M_h and for different renormalization/factorization scales μ.

[5] T. D. Lee and M. Nauenberg, Phys. Rev. **133**, B1549 (1964).

[6] L. Lewin, *Dilogarithms and Associated Functions*, MacDonald London 1958.