

Fig. 6.3 demonstrates the effect of including all the terms generated by Eq. (6.4), not just the LO in $1/E^+$. Of course at higher E and p_T the additional terms make little difference, but they regulate the otherwise divergent results in $\Delta p_T/p_T$ as $p_T \rightarrow 0$. The Ter-Mikayelian effect, given by the difference between the $m_\gamma \neq 0$ and $m_\gamma = 0$ plots in Fig. 6.3, varies from 10-40% for charm and bottom energy loss.

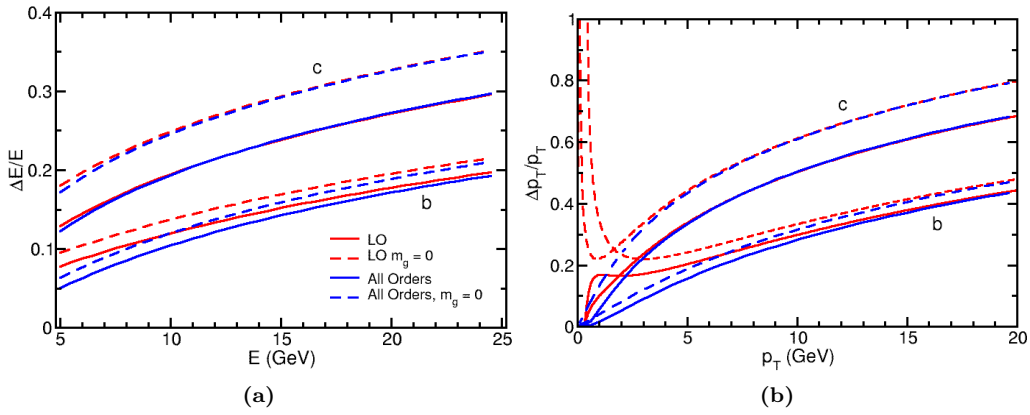


Figure 6.3: The effect of including all terms from Eq. (6.4) instead of just the leading order (LO) terms in $1/E^+$ for (a) $\Delta E/E$ and (b) $\Delta p_T/p_T$ (the legend in (a) applies to both plots). For $\Delta E/E$, the size of the relative difference in magnitude—the Ter-Mikayelian effect—is changed little while the overall normalization is significantly altered at low energies. For $\Delta p_T/p_T$ both the relative and overall normalizations change quite a bit, with the inclusion of all terms regulating the $p_T \rightarrow 0$ divergences in the vacuum production radiation spectrum.