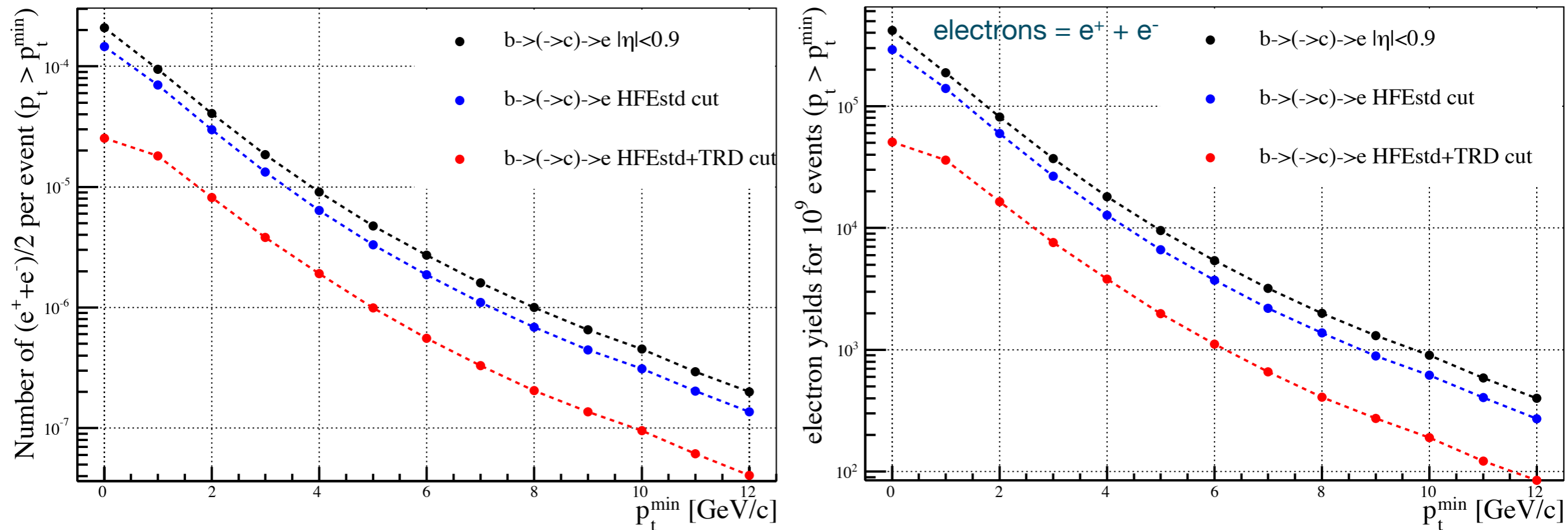# Heavy electron yields for 10^9 pp events at $\sqrt{s} = 7$ TeV

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Beauty electron yield in p+p at $\sqrt{s} = 10$ TeV

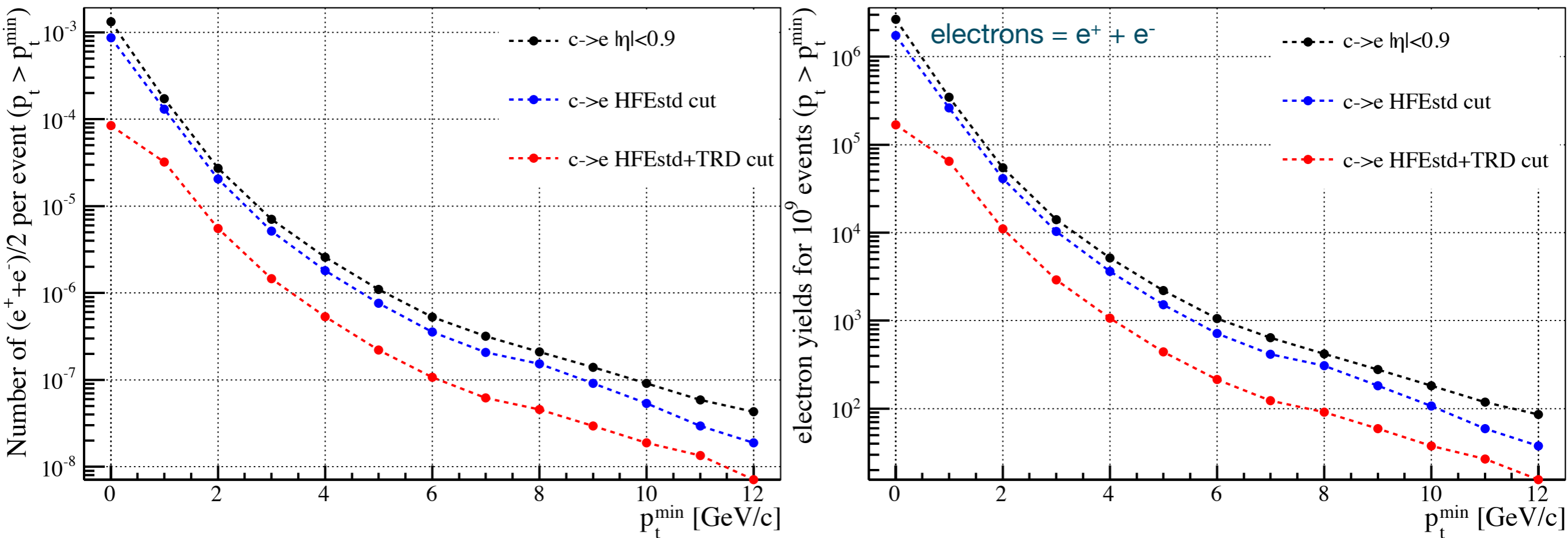**Pythia simulation for 10 TeV MinBias**

➡️ *1 year at nominal luminosity(10^9 pp events) will lead*
~140k(36k) integrated beauty electrons at $p_t > 1$ GeV/c

note: here blue, red follows cut convention in the plot

Charm electron yield in p+p at $\sqrt{s} = 10$ TeV
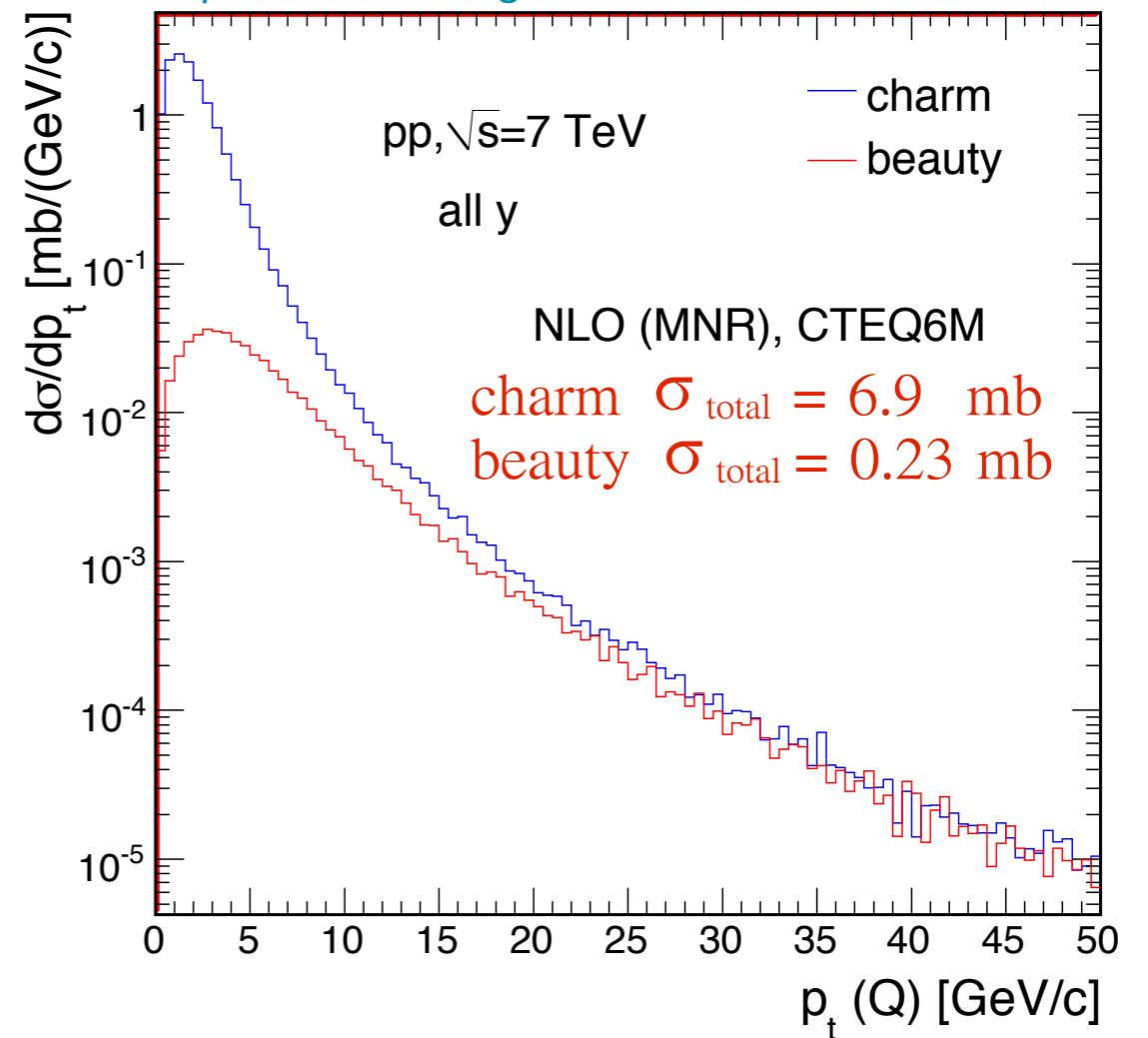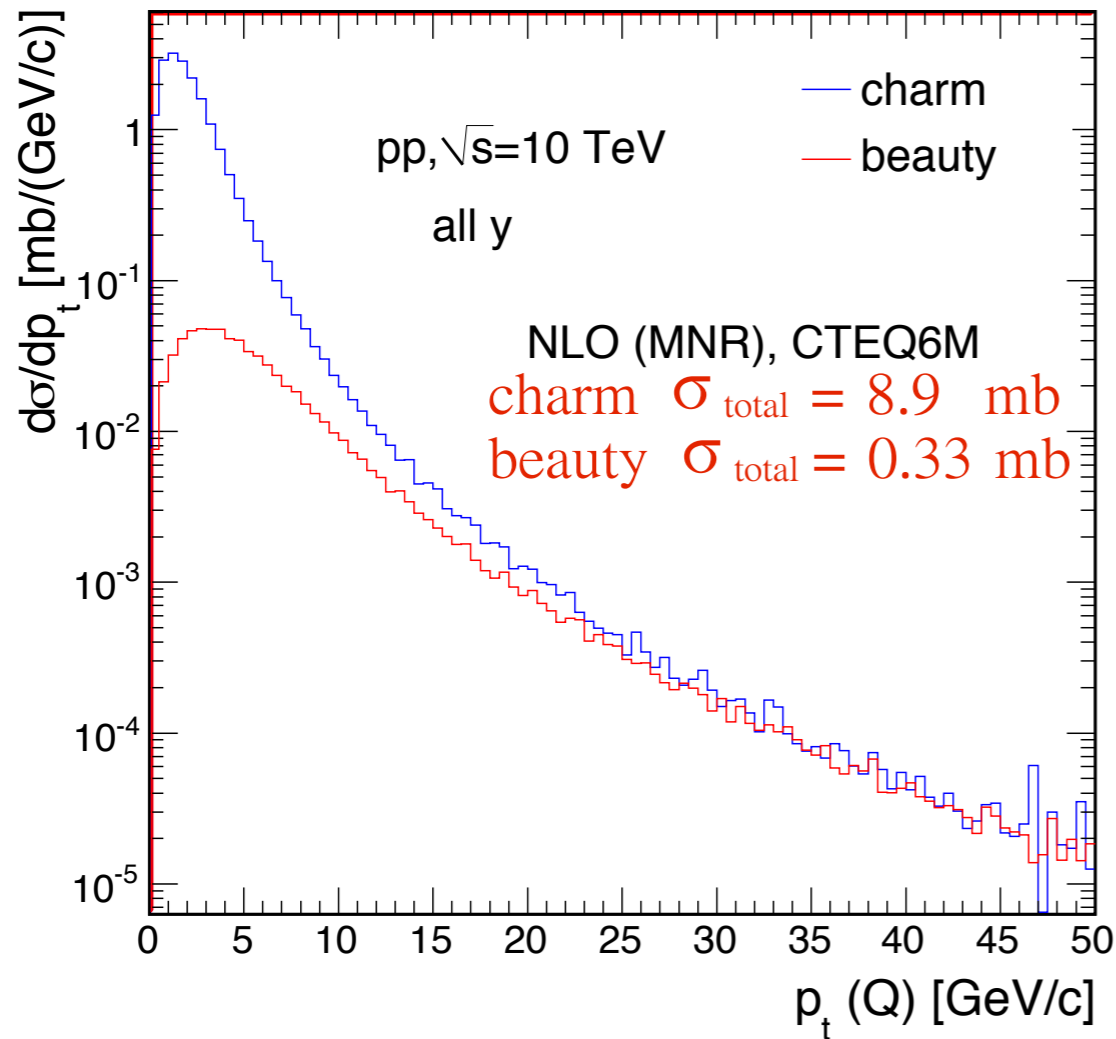
Pythia simulation for 10 TeV MinBias

➡️ *1 year at nominal luminosity(10^9 pp events) will lead*
~240k(60k) integrated charm electrons at $p_t > 1$ GeV/c

note: here blue, red follows cut convention in the plot

Extrapolation to $\sqrt{s} = 7$ TeV

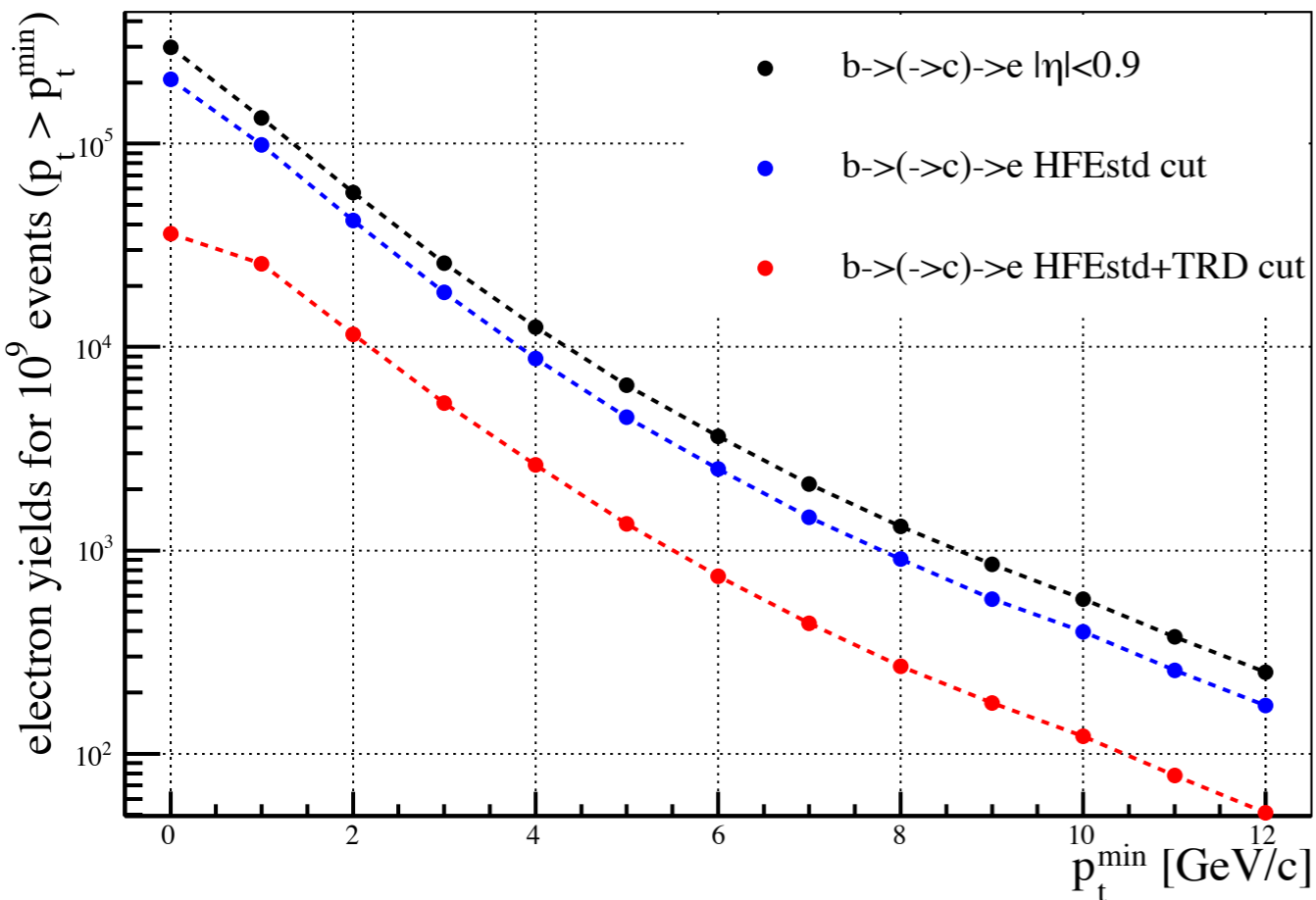Scale with cross section
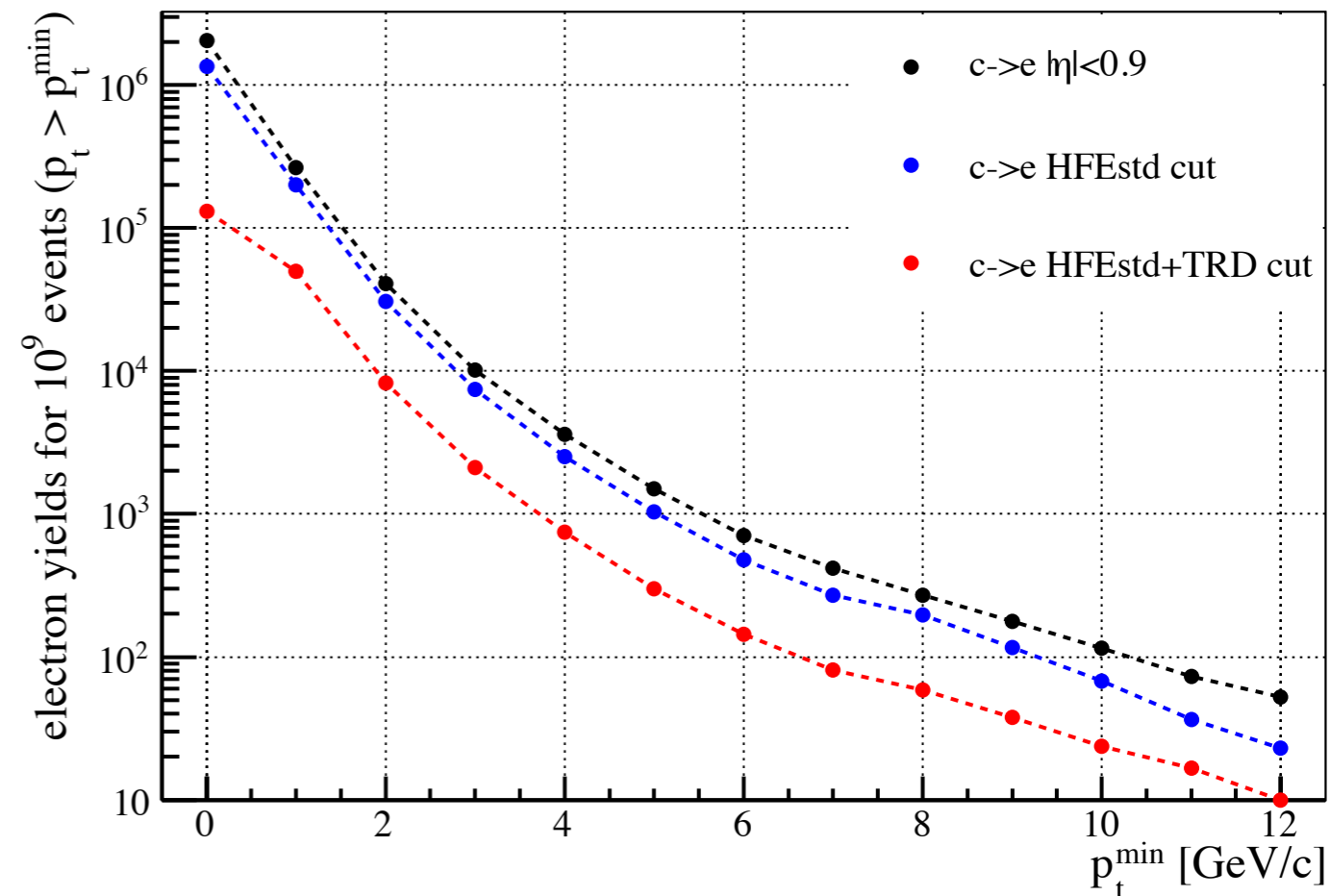obtained from HVQMNR :

$$yield(p_t^{min}, 7TeV) = yield(p_t^{min}, 10TeV) \times \frac{\int_{p_t^{min}}^{\infty} \frac{d\sigma}{dp_t} \, dp_t \, at \; 7TeV}{\int_{p_t^{min}}^{\infty} \frac{d\sigma}{dp_t} \, dp_t \, at \; 10TeV}$$

Extrapolated yield at $\sqrt{s} = 7$ TeV

Beauty in pp @ $\sqrt{s}$ = 7 TeV

Charm in pp @ $\sqrt{s}$ = 7 TeV

10^9 pp events leads ~190k(47k) charm and ~98k(25k) beauty electrons at $p_t > 1$ GeV/c