

EX-2; process generation (coupling order)

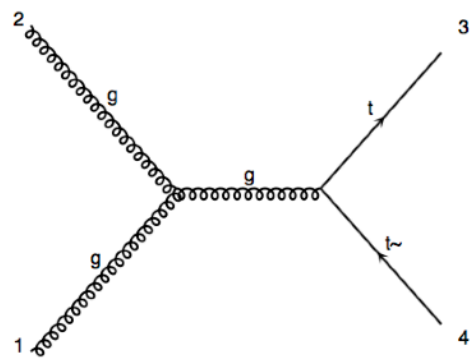


diagram 1 **QCD=2, QED=0**

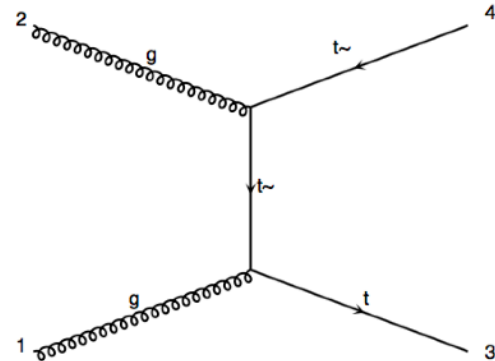


diagram 2 **QCD=2, QED=0**

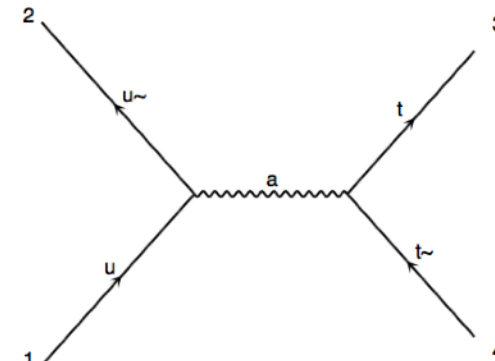


diagram 1 **QCD=0, QED=2**

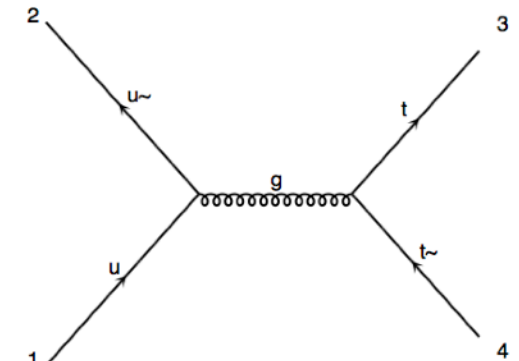


diagram 2 **QCD=2, QED=0**

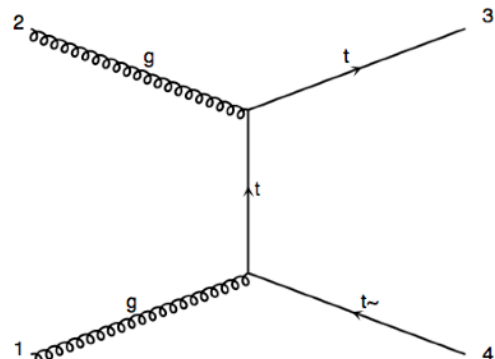


diagram 3 **QCD=2, QED=0**

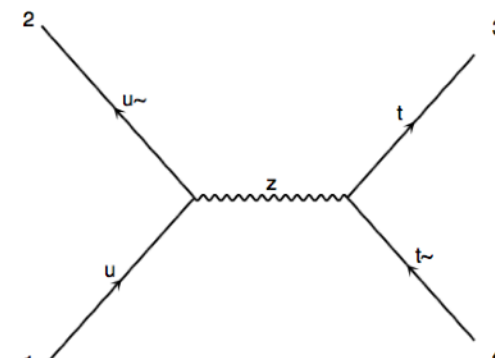


diagram 3 **QCD=0, QED=2**

QCD
only

		Cross-Section ↓
/P1_gg_ttx		<u>441.7</u>
/P1_qq_ttx		<u>64.04</u>

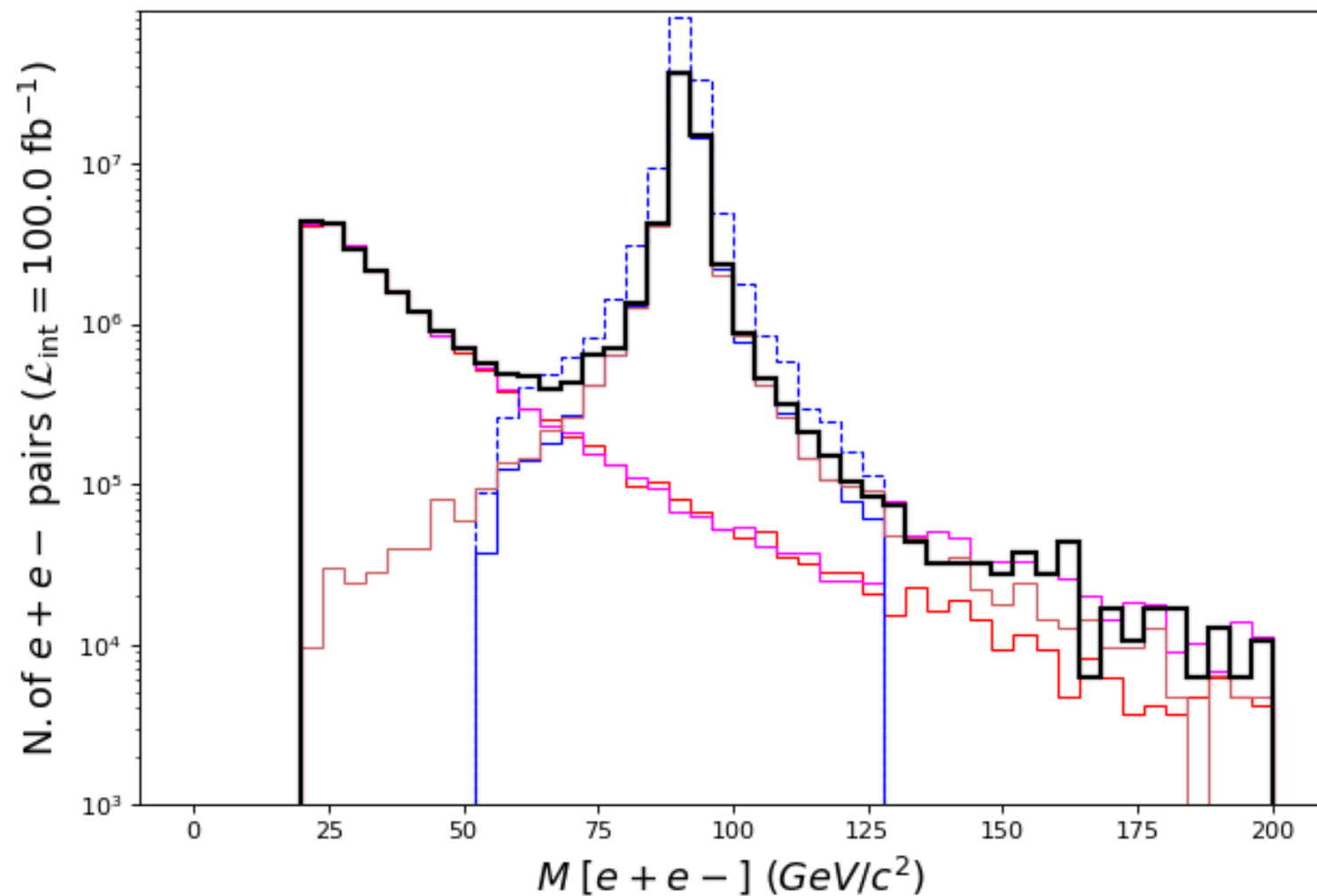
QCD
+
QED

		Cross-Section ↓
/P1_gg_ttx		<u>441.7</u>
/P1_qq_ttx		<u>64.06</u>

EX-3; process generation (syntax)

Run MA5 standalone;

\$...HEPTools/madanalysis5/madanalysis5/bin/ma5 test.ma5



Check `cut_decays` in `run_card.dat`.

test.ma5

```
import ProcDY1/Events/run_02/unweighted_events.lhe.gz as DY1
import ProcDY2/Events/run_02/unweighted_events.lhe.gz as DY2
import ProcDY3/Events/run_02/unweighted_events.lhe.gz as DY3
import ProcDY3/Events/run_03/unweighted_events.lhe.gz as DY3_cutdecayT
import ProcDY4/Events/run_02/unweighted_events.lhe.gz as DY4
import ProcDY5/Events/run_02/unweighted_events.lhe.gz as DY5
#import ProcDY6/Events/run_02/unweighted_events.lhe.gz as DY6
#
set main.stacking_method = superimpose
set main.lumi = 100
set DY1.linecolor = black
set DY1.linewidth = 2
set DY3.linecolor = blue
set DY3.linestyle = dashed
set DY3_cutdecayT.linecolor = blue
#
plot M(e+ e-) 50 0 200 [logY]
set selection[1].ymin = 1000
submit MA5plot
```