

$e\mu, \geq 2 \text{ jets}, \geq 1 \text{ btag}, \geq 1 \gamma$ $\sqrt{s}=8 \text{ TeV}, \text{ Ldt}=19.7 \text{ fb}^{-1}$

Number of Events

CMS Preliminary

- + 2012 data
- $t\bar{t}+\gamma$
- $t\bar{t} \text{ 0l}$
- $t\bar{t} \text{ 1l}$
- $t\bar{t} \text{ 2l}$
- Single Top
- Z+Jets
- WW/ZZ/WZ
- W+Jets
- QCD

 10^4 10^3 10^2

10

0

0.5

1

1.5

2

2.5

3

3.5

4

4.5

5

 $\Delta R(\gamma, e)$ 