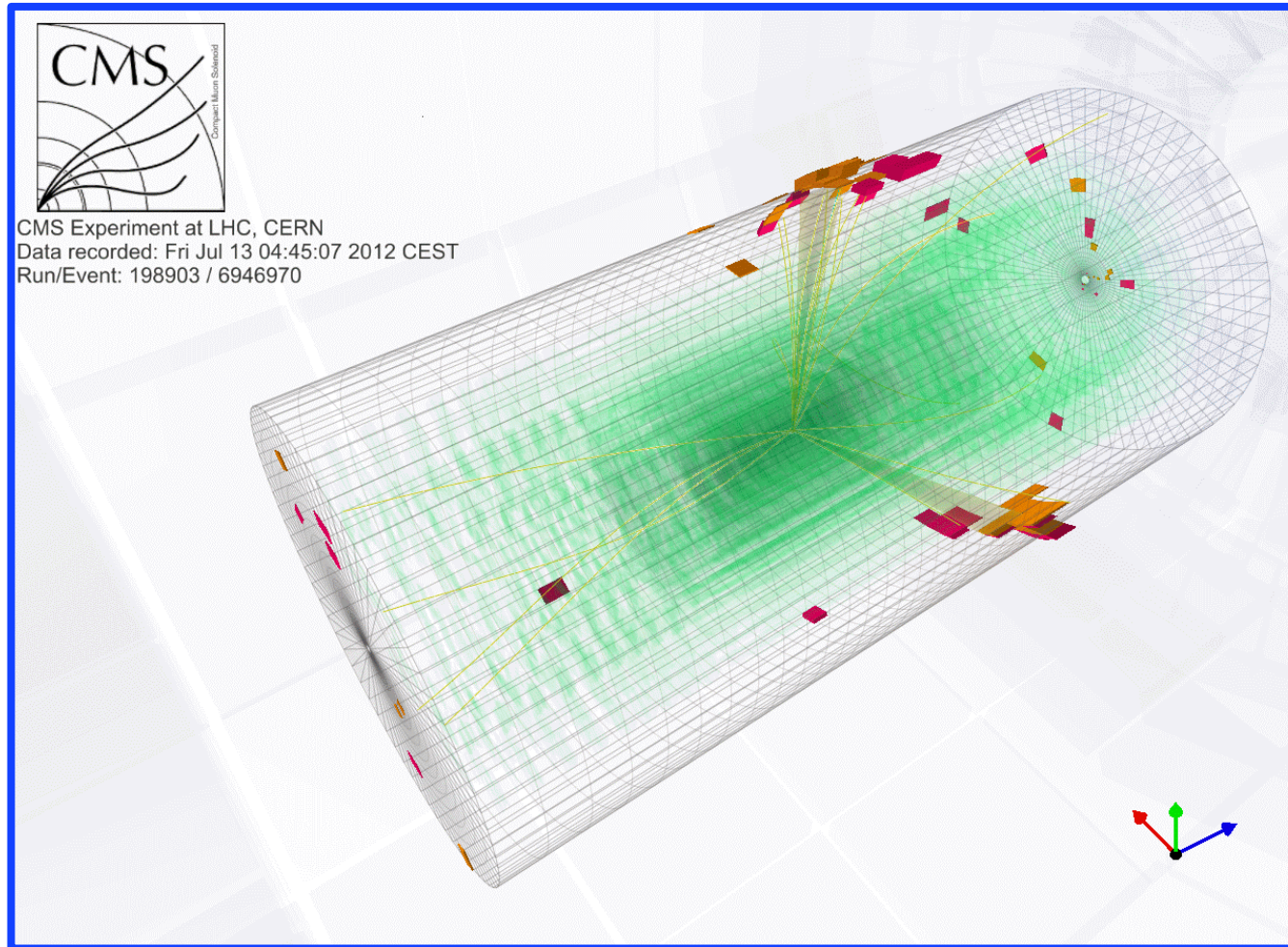


# High $E_T$ Jets and Pomerons : Both bj's many interests (& full acceptance detectors)

Mike Albrow (FNAL)



bj inspired rap-gap detectors  
First CDF at Tevatron  
then → CMS at LHC

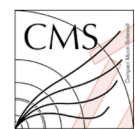
Jets  $E_T = 42.3, 40.5$  GeV  
 $M(JJ) = 93.3$  GeV  
FSC ( $6 \sim < |\eta| \sim < 8$ ) empty

The cleanest jet events you ever saw at a hadron collider!  $p + JJ + p$

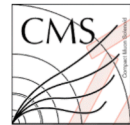
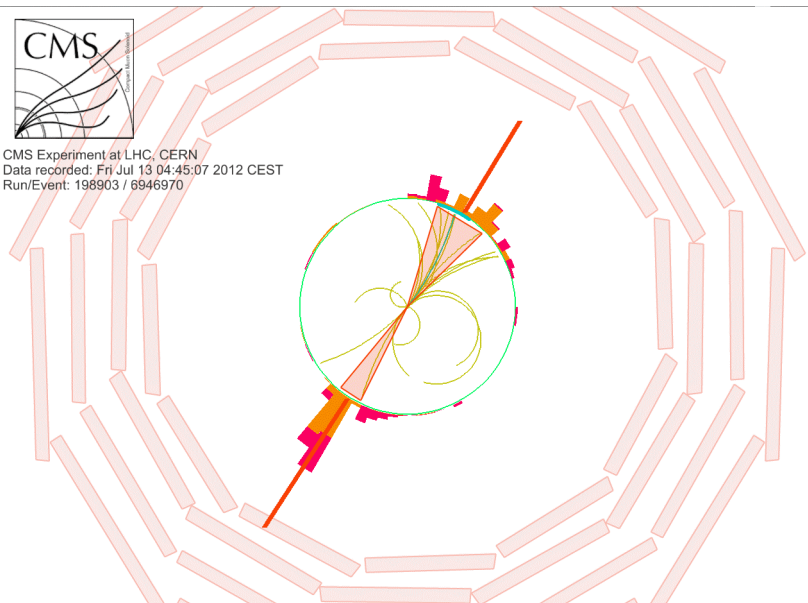
Thanks to TOTEM for protons, FSC for rapidity gaps, low pile-up running in 2012

“Rapidity Gap detectors” = FORWARD SHOWER COUNTERS (FSC) IN CMS

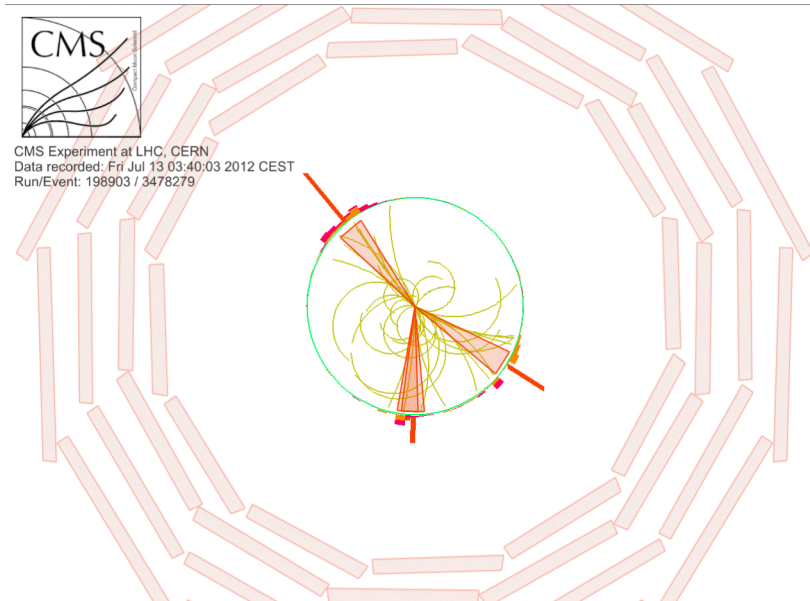




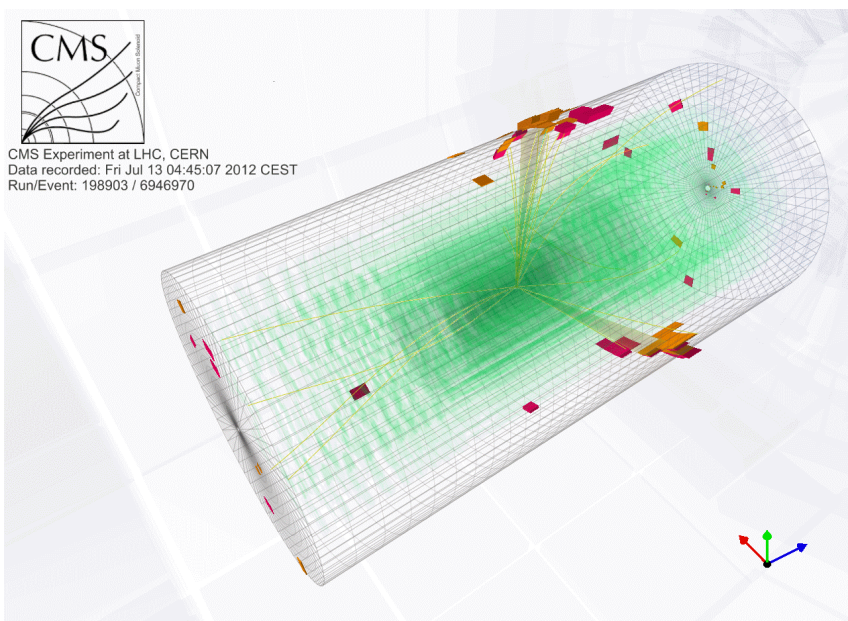
CMS Experiment at LHC, CERN  
Data recorded: Fri Jul 13 04:45:07 2012 CEST  
Run/Event: 198903 / 6946970



CMS Experiment at LHC, CERN  
Data recorded: Fri Jul 13 03:40:03 2012 CEST  
Run/Event: 198903 / 3478279

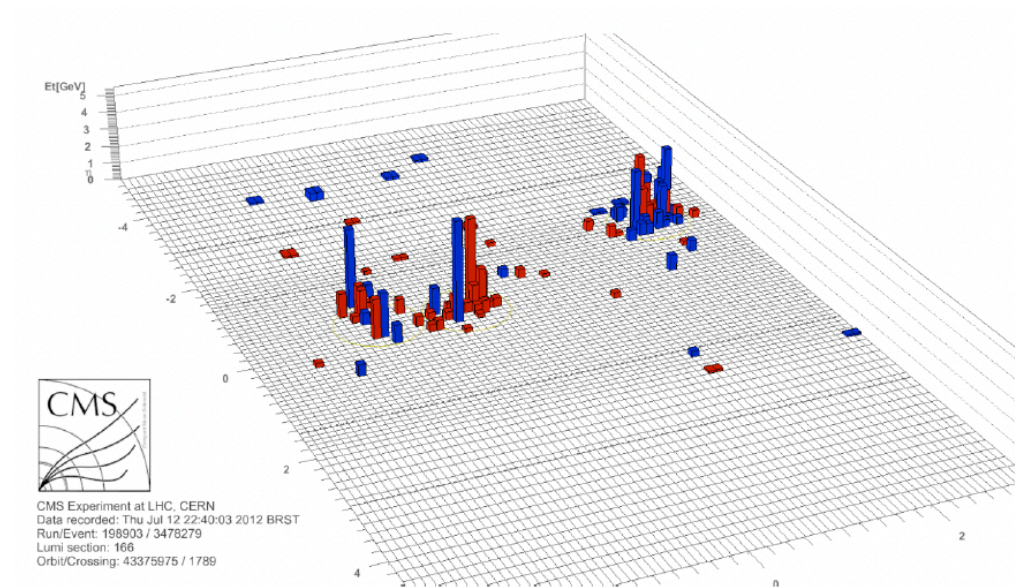


CMS Experiment at LHC, CERN  
Data recorded: Fri Jul 13 04:45:07 2012 CEST  
Run/Event: 198903 / 6946970



$E_T$ [GeV]

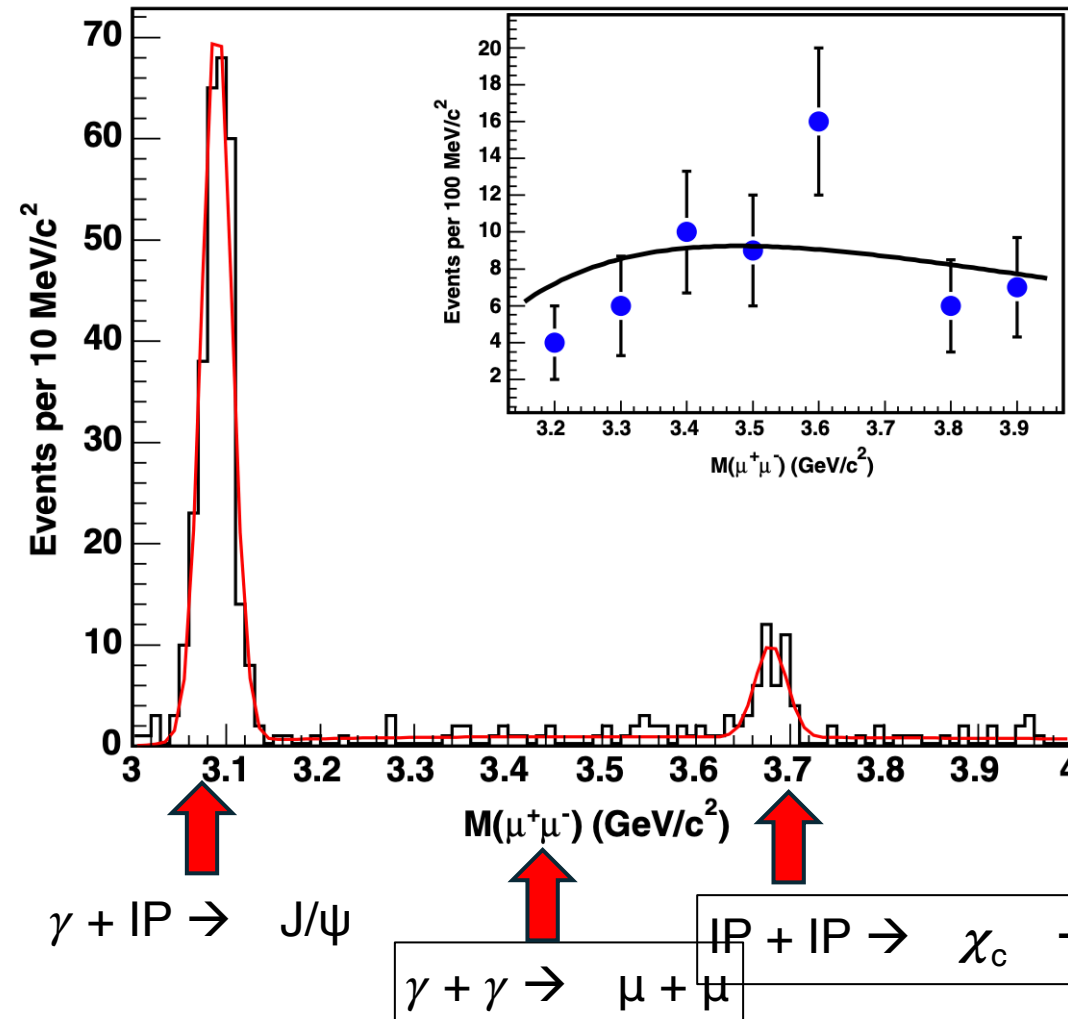
CMS Experiment at LHC, CERN  
Data recorded: Thu Jul 12 22:40:03 2012 BRST  
Run/Event: 198903 / 3478279  
Lumi section: 166  
Orbit/Crossing: 43375975 / 1789



About 50 “perfect” 2-jet events and a few 3-jet events

## Observation of Exclusive Charmonium Production and $\gamma\gamma \rightarrow \mu^+\mu^-$ in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV

264 citations

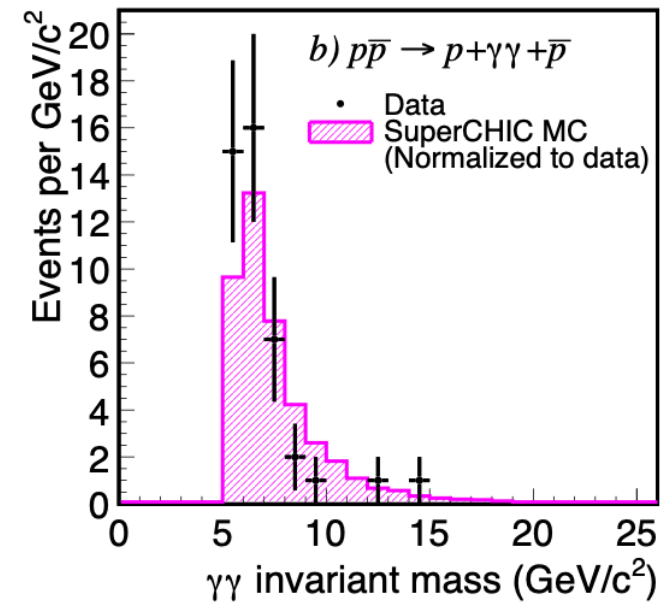
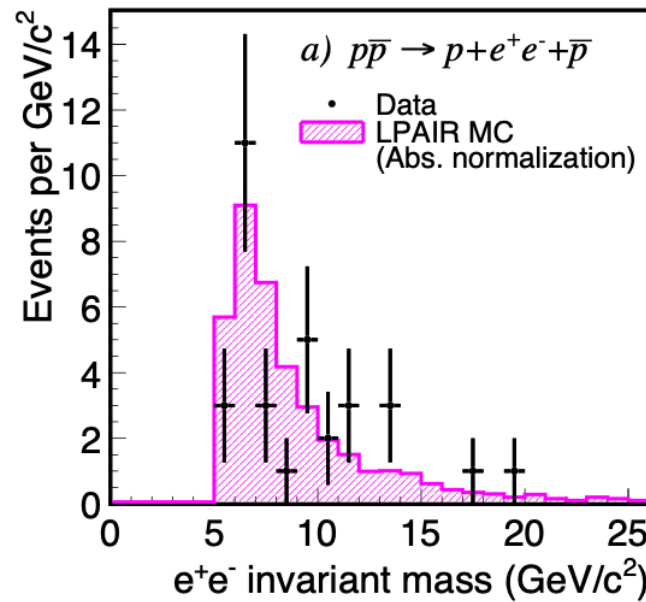
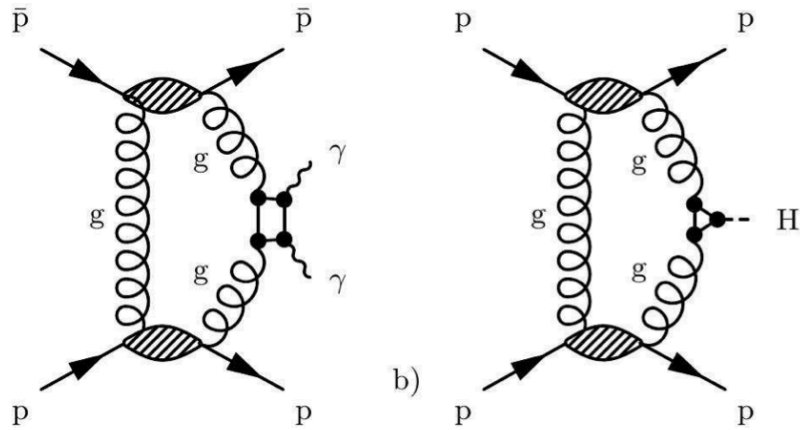


bj inspired adding forward rapidity gap detectors (BSC) to CDF.

First observations in pp (not e+e-, e p)

Observation of Exclusive  $\gamma\gamma$  Production in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1.96$  TeV

Test theory: perturbative pomeron



Constrains  $\sigma (p + H(125) + p)$  to be a few fb at LHC

Diffractive excitation of the vacuum  $\rightarrow$  Higgs.