



#askCERN

# Hangout with CERN: Higgs, the unanswered questions

**22 November 2012**









CERN  
Higgs search  
update 04.07.2012

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 **ATLAS**  
EXPERIMENT

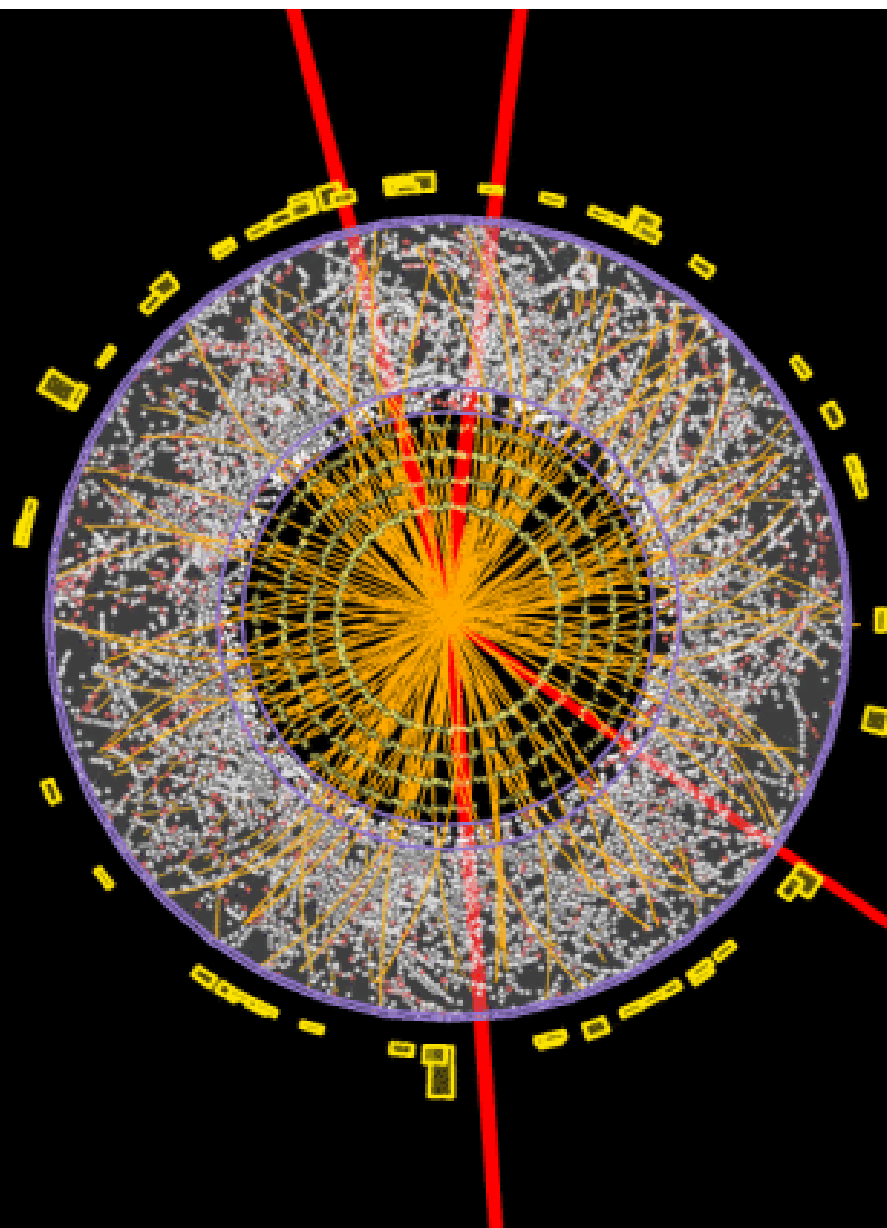
<http://atlas.ch>

Run: 204769

Event: 71902630

Date: 2012-06-10

Time: 13:24:31 CEST

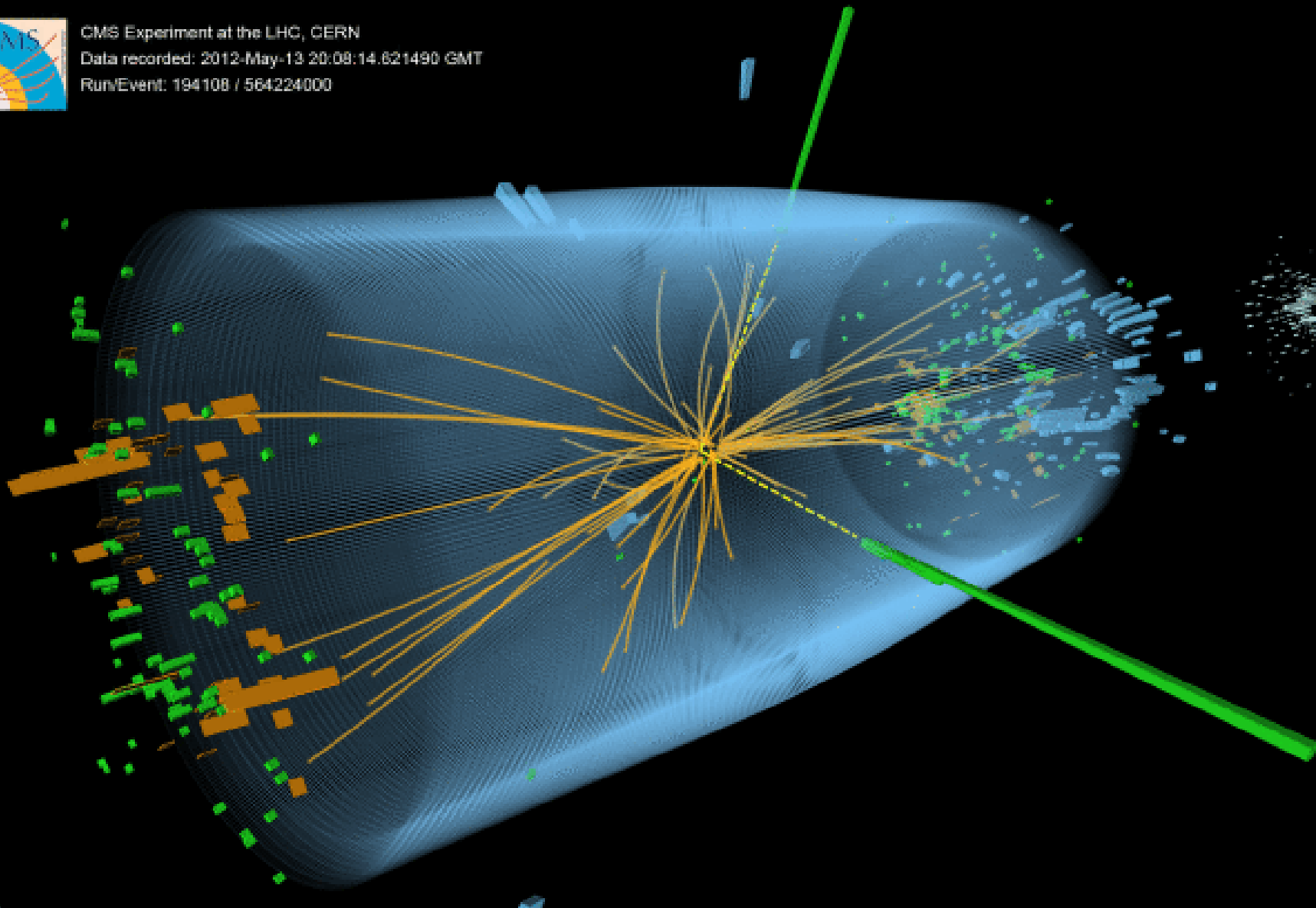




CMS Experiment at the LHC, CERN

Data recorded: 2012-May-13 20:08:14.621490 GMT

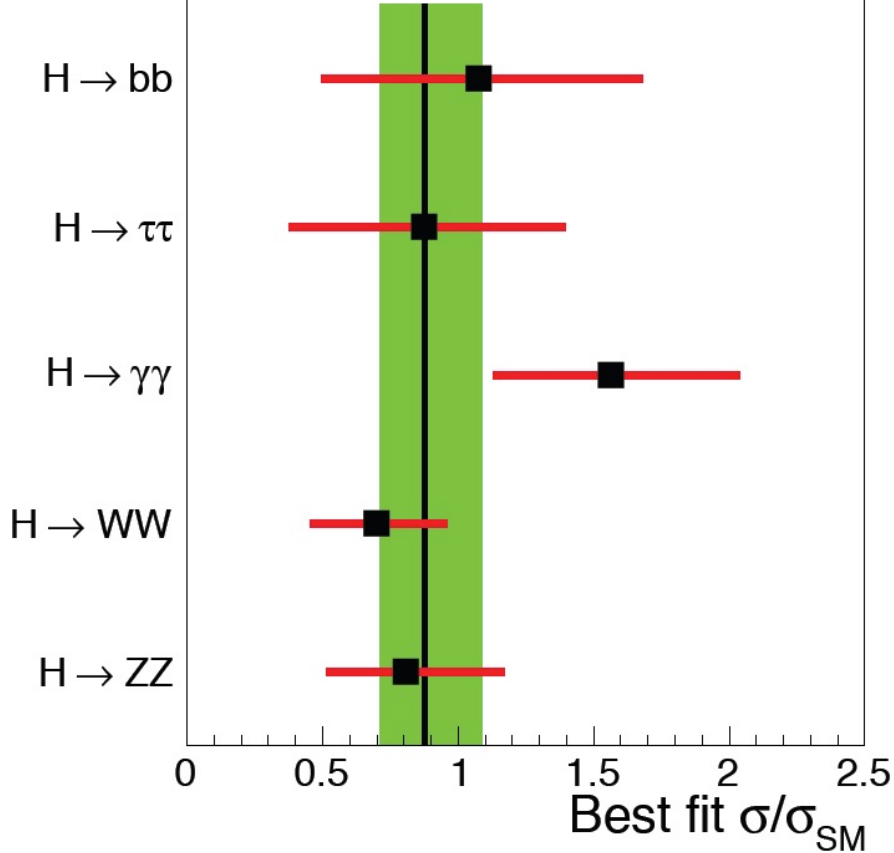
Run/Event: 194108 / 564224000





$\sqrt{s} = 7 \text{ TeV}, L = 5.1 \text{ fb}^{-1}$   $\sqrt{s} = 8 \text{ TeV}, L = 12.2 \text{ fb}^{-1}$

CMS Preliminary  $m_H = 125.8 \text{ GeV}$



ATLAS Preliminary

$m_H = 126 \text{ GeV}$

$W, Z H \rightarrow bb$

$\sqrt{s} = 7 \text{ TeV}: \int L dt = 4.7 \text{ fb}^{-1}$

$\sqrt{s} = 8 \text{ TeV}: \int L dt = 13 \text{ fb}^{-1}$

$H \rightarrow \tau\tau$

$\sqrt{s} = 7 \text{ TeV}: \int L dt = 4.6 \text{ fb}^{-1}$

$\sqrt{s} = 8 \text{ TeV}: \int L dt = 13 \text{ fb}^{-1}$

$H \rightarrow WW^{(*)} \rightarrow l\nu l\nu$

$\sqrt{s} = 8 \text{ TeV}: \int L dt = 13 \text{ fb}^{-1}$

$H \rightarrow \gamma\gamma$

$\sqrt{s} = 7 \text{ TeV}: \int L dt = 4.8 \text{ fb}^{-1}$

$\sqrt{s} = 8 \text{ TeV}: \int L dt = 5.9 \text{ fb}^{-1}$

$H \rightarrow ZZ^{(*)} \rightarrow 4l$

$\sqrt{s} = 7 \text{ TeV}: \int L dt = 4.8 \text{ fb}^{-1}$

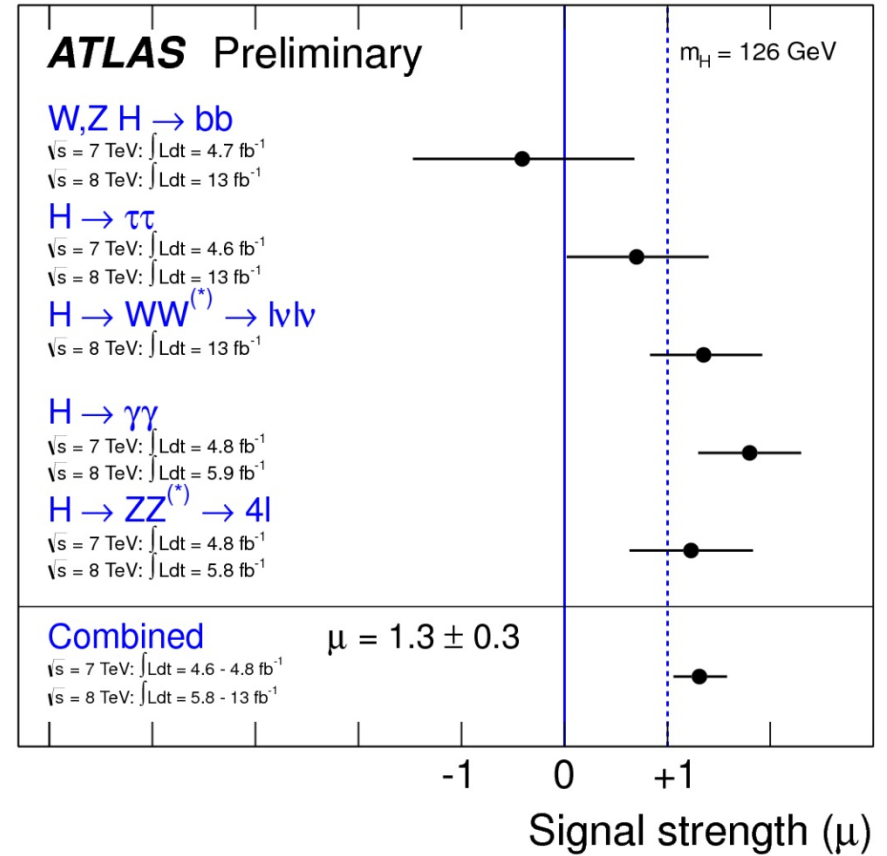
$\sqrt{s} = 8 \text{ TeV}: \int L dt = 5.8 \text{ fb}^{-1}$

Combined

$\mu = 1.3 \pm 0.3$

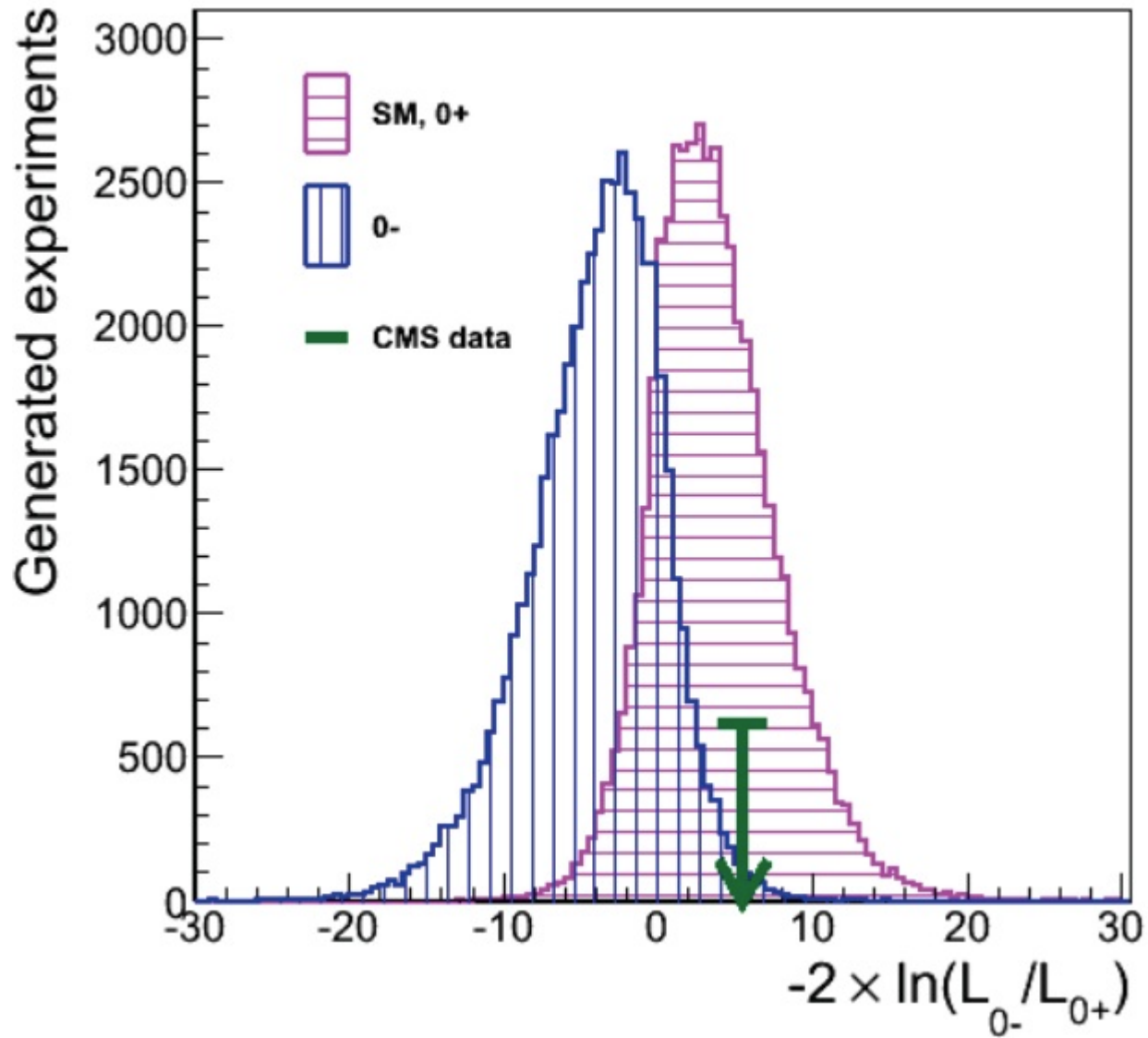
$\sqrt{s} = 7 \text{ TeV}: \int L dt = 4.6 - 4.8 \text{ fb}^{-1}$

$\sqrt{s} = 8 \text{ TeV}: \int L dt = 5.8 - 13 \text{ fb}^{-1}$



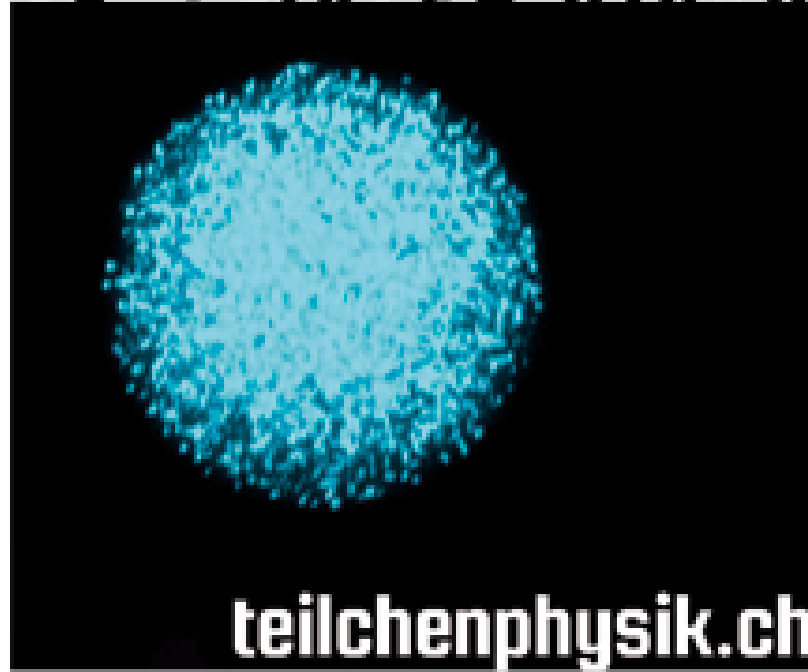
CMS Preliminary

$\sqrt{s} = 7 \text{ TeV}, L = 5.1 \text{ fb}^{-1}$   $\sqrt{s} = 8 \text{ TeV}, L = 12.2 \text{ fb}^{-1}$



<http://www.teilchenphysik.ch/>

**VERFLIXTES HIGGS**





[www.cern.ch](http://www.cern.ch)