

# LHC Higgs: 140 GeV or 125 GeV ?

by Frank Dodd (Tony) Smith Jr.

Abstract:

CERN's analysis of 2/fb of data collected by the LHC in the first part of 2011

shows two likely possibilities for Higgs with the expected total cross section:

Standard Model Higgs with 3 Mass States at 140 and 200 and 240 GeV

and

SuperString Higgs with 1 Mass State at 125 GeV.

By Halloween 2011 the LHC had collected 5/fb of data that may indicate which is correct.

Despite a preponderance of rumors in favor of a SuperString Higgs at 125 GeV

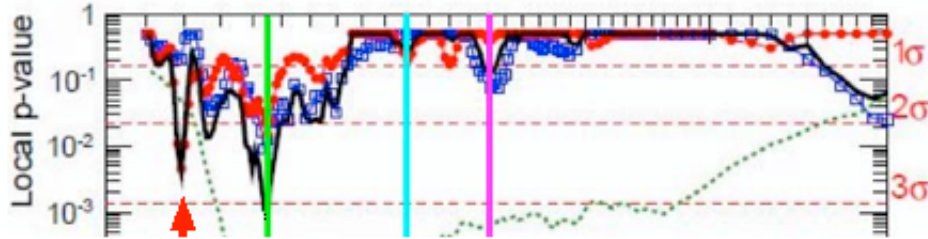
my view is in favor of a Standard Model Higgs with 3 Mass States including 140 GeV.

(References are included in the body of the paper and in linked material.)

# LHC Higgs: 140 GeV or 125 GeV ?

Frank Dodd (Tony) Smith, Jr. - 2011

CERN's analysis of 2/fb of data collected by the LHC in the first part of 2011



shows two likely possibilities for Higgs with the expected total cross section:

**Standard Model Higgs with 3 Mass States at ● 140 GeV and ● 200 GeV and ● 240 GeV that leads to a unified E8 Physics Model of Gravity plus Standard Model (viXra 1108.0027)**

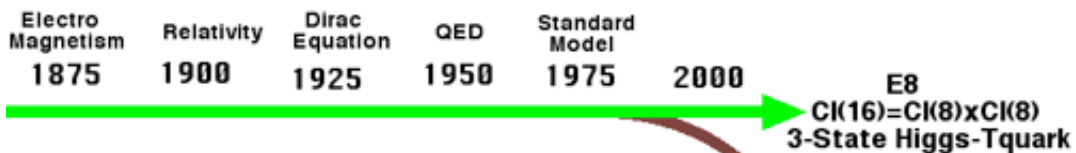
**SuperString Higgs with 1 Mass State at ▲ 125 GeV that leads to SuperString Theory**

**particularly a G2 MSSM Model of Kane et al (arXiv 1112.1059)**

Future data and analyses at the LHC may indicate which possibility represents the Real World thus showing the other to have been only an irrelevant intellectual exercise.

My view is that **3-State Higgs with 140 GeV** will lead Physics to a Future of Progress

## Progress of Physics



**Dead-End BandWagon**

**SuperStrings  
G2 MSSM  
Single-State Higgs**



and that **1-State SuperSymmetric Higgs at 125 GeV** will doom Physics to continuing its March of a Dead-End SuperString Bandwagon (image from Animal House).

My fear is that Sociological/Political factors may cause CERN to emphasize analyses that favor the **1-State SuperSymmetric Higgs at 125 GeV**.

After all, CERN is a bureaucracy with thousands of members each of whom have ties to physics establishment institutions throughout the world

and

the dominant Theoretical Physics paradigm in the vast majority of those institutions is SuperString Theory.

CERN analysts now have 5/fb of data and have scheduled for 13 December 2011 a Higgs Seminar. The SocioPolitical atmosphere leading up to that Seminar can be gauged by internet rumors:

"... the latest ATLAS data shows an excess in the gamma-gamma channel around 126 GeV, of the size expected if the Higgs is there, and CMS is also seeing an excess (2 sigma?) around 125 GeV in the same channel ...". (2 Dec Woit blog)

"... the statistical significance of the ATLAS bump at 126 GeV is 3.5 sigma ... of the CMS bump at ...  $2 \times 62.3 = 124.6$  GeV ... is 2.5 sigma ...". (9 Dec Motl TRF blog)

"... STRING/M SUSY theory PREDICTS the HIGGS mass to be  $126 \pm 2$  GeV <http://arxiv.org/pdf/1112.1059> [by Kane et al] in full agreement with the fully correct rumors. ..." (6 Dec comment on Woit blog)

"... [ Higgs at 125 GeV around 2-3 sigma ] would be great news for Gordy Kane et al. – and favor the G2-holonomy-like M-theory models with  $\tan(\beta)=8$  or so. ...". (2 Dec Motl comment on viXra blog)

"... our string theory prediction for the Higgs boson mass ... arXiv:1112.1059 is ...[ around 125 GeV based on G2 holonomy manifolds in M-theory ]...". (7 Dec Kane guest post on Motl TRF blog and 5 Dec TRF blog post)

"... various physics blogs, and the canteens at Cern, are alive with talk of a possible sighting of the Higgs ... They now expect to see it at around 120 to 125 GeV ... the director of research at Cern, Sergio Bertolucci, ... told ... Newsnight's science editor Susan Watts ... : "... I think we may get indications that are not consistent with its non-existence."... Professor John Ellis, a former head of theoretical physics at Cern, told ... Susan Watts about the growing sense of excitement at Cern ... "I think we are going to get the first glimpse ... there's a whole intermediate range where we know it cannot be, then there's the low mass range where we actually expect it might be. There seem to be some hints emerging there ...". (7 Dec BBC News)

"... The entire range from 141 to 470 GeV/c<sup>2</sup> is now excluded (according to the combination of the summer's data from ATLAS and CMS that was announced a few weeks ago). ...". (Strassler guest post on Cosmic Variance Carroll blog)

The SocioPolitical Internet Rumors clearly endorse the **1-State SuperSymmetric Higgs at 125 GeV** and since the **3-State Higgs with 140 GeV** has two states in the intermediate range from 141 to 470 GeV that Strassler says "is now excluded" and Ellis says is "where ... it cannot be" the SocioPolitical Internet Rumors clearly reject the **3-State Higgs with 140 GeV** so clearly that it is obvious that the Internet Rumor Component of the Physics Community has a SocioPolitical Consensus biased in favor of the **1-State SuperSymmetric Higgs at 125 GeV** and against the **3-State Higgs with 140 GeV**.

## Is Bias against the 3-State Higgs with 140 GeV (and 200 GeV and 240 GeV) Justified ?

### 1 - The exclusion of the intermediate range from 141 to 470 GeV by Ellis and Strassler is not justified.

The Ellis/Strassler exclusion is at 95% confidence level.

Tommaso Dorigo said 2 Dec 2011 on his blog "... a upper limit at 95% confidence level is not enough to assert that the particle does not exist: the particle is then only "disfavoured", because only once in twenty cases would the experiment find that result if the particle did have that mass and existed and behaved as the Standard Model predicts. ... in order to really prove that our understanding of electroweak symmetry breaking is flawed and that there is no Higgs boson we would need a much, much more solid evidence than a mere "95% exclusion". I would not be satisfied with anything less than a 99.9% exclusion (over three sigma) across the full mass range. ...".

The weakness of a 95% confidence level has been described by [XKCD](#).

Therefore the Ellis/Strassler exclusion of the intermediate range from 141 to 470 GeV is not justified.

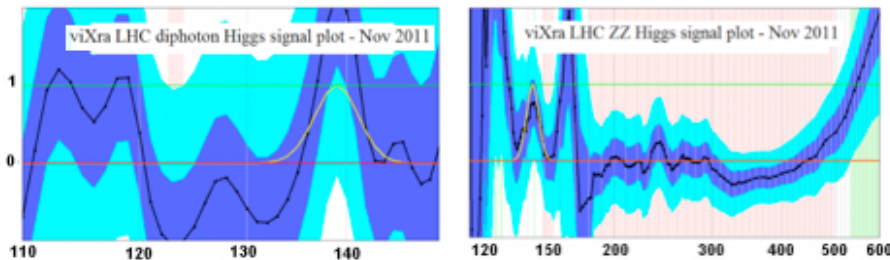
### 2 - A gamma-gamma channel peak at 125 GeV in inconsistent with 2/fb data and at 5/fb should be regarded as unreliable.

The 125 GeV rumors are based on 5/fb of data in the gamma-gamma (diphoton) channel.

That is substantially different from the 2/fb data for which Phil Gibbs (viXra blog 21 Nov 2011) said about combined ATLAS and CMS data:

"... viXra LHC diphoton Higgs signal plot - Nov 2011 ... The best fit... is ... 139 GeV ...

... viXra LHC ZZ Higgs signal plot - Nov 2011 ... The best fit... is ... 143 GeV ...



... it is a pretty consistent result ...". Note the small peaks at 200 GeV and 240 GeV in the ZZ plot and the deficit (black line below zero line) from 121 to 135 GeV in the diphoton (gamma-gamma) channel. In a 2 December 2011 comment on the Woit blog "... A 125-126 GeV Higgs? ... Jester says: That would be weird,

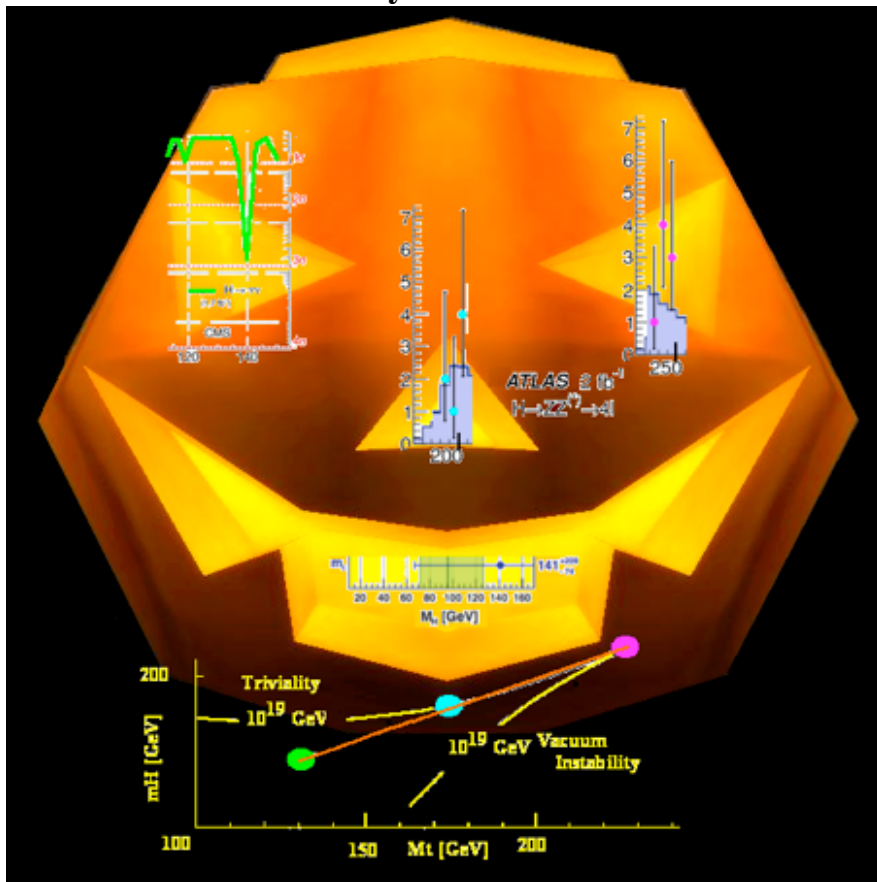
given that in the summer dataset both ATLAS and CMS had a deficit in gamma-gamma around 125 GeV ...".

**If the CERN Seminar on 13 Dec 2011 is in line with the 125 GeV rumors, then my view is that CERN analysts will have suppressed the 140 GeV 2/fb best fit and the 200 GeV and 240 GeV 2/fb small peaks by improper use of analytical techniques, such as improper application of the LEE (Look Elsewhere Effect) (see viXra 1107.0048).**

**Will the CERN Seminar on 13 Dec 2011 show the same UnJustified Bias against the 3-State Higgs with 140 GeV (and 200 GeV and 240 GeV) as the Internet Rumor Component of the Physics Community ?**

If so, it will be clear that the Entire Physics Community has a SocioPolitical Consensus biased in favor of SuperString Theory including the 1-State SuperSymmetric Higgs at 125 GeV and against the 3-State Higgs with 140 GeV.  
The answer will come with the 13 Dec 2011 Seminar.

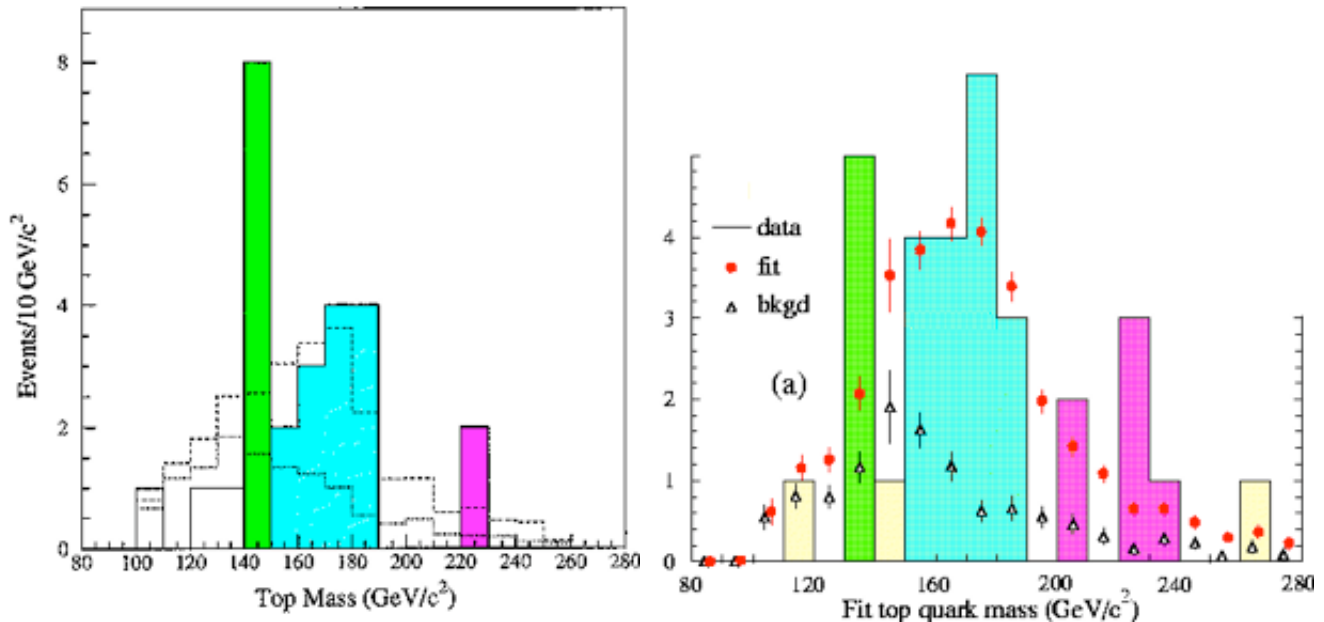
**As to what is the True State of Physics as of the end of the LHC 2011 Higgs Run (Halloween 2011), my view is**



( [For details click here.](#) )

**My unhappiness with UnJustified Bias against the 3-State Higgs with 140 GeV (and 200 GeV and 240 GeV) is amplified by my past experience with Fermilab's similar Bias against the 3-State Truth Quark.**

Back in the 1990s Fermilab CDF saw (left image below) 3 peaks for the Truth Quark Mass. but they ignored the high mass (magenta) peak and dismissed the low mass (green) peak as a "statistical fluctuation", and insisted that the medium mass (cyan) peak was the Single Mass State of the Truth Quark.



Even when the independent Fermilab detector D0 (right image above) saw the same 3 peaks including a similar tall low mass (green) peak (very unlikely that an independent detector would produce a similar "statistical fluctuation" in the same place)

Fermilab continued to ignore the low mass (green) and high mass (magenta) peaks and to insist that the Truth Quark had only a Single Mass State, at the middle mass (cyan) peak. For the better part of two decades, up to the present, Fermilab designed experiments and analysis based on their Single Mass State model of the Truth Quark.

Detailed study of their results continued to point to the Truth Quark having 3 Mass States so I consistently pointed out the consistency of Fermilab's own experiments with the 3 Mass State model, but my reward has been to be ignored, ostracized and blacklisted.

My health (lupus, kidney failure, and heart attack) is not good enough for me to continue fight against UnJustified Bias of the SocioPolitical Consensus of the Physics Community.

Since my Physics ideas are fundamentally intertwined with my Fundamental Belief System back through Ramon Llull, to Jesus, to Confucius and Lao Tze and the I Ching and Futomani Divination and the Rig Veda, and

to their African source of IFA attacks (ostracism, blacklisting, etc) on my Physics ideas hurt me on a very deep personal level.

If today's USA were a happy land of opportunity for constructive prosperity, I could say GoodBye to Physics and devote my energies to other areas,

perhaps in my profession of law.  
However, the practice of law in today's USA has become a blind pursuit of dollar profit  
and  
the only profitable "acceptable occupations" in today's USA are:

the Big Bank Derivative Casino Ponzi Scheme funded by Quantitative Easing money-printing  
and  
government/banking controlled bureaucracies (education, corrections, health care, regulatory boards)  
in which success depends on giving up Independent Thought and becoming Conformist to the Consensus  
and  
the Military Industry whose life-blood is destroying property and killing people who are too weak to fight  
back.

If I were to go into any of those, I would lose my self-respect  
to the extent that I could not live with myself.

Confucius had good advice (Analects VIII 13) for people in my situation:

**When a country is ill-governed, it is a disgrace to be rich and honored.  
Do not stay in such a State.**

If I were to follow the advice of Confucius,  
I would leave the ill-governed USA and move to a country  
whose economy is based on productive work instead of Ponzi Casinos and stagnant bureaucracies  
and  
whose foreign policy is based on economic investment instead of death and destruction.

China seems to be such a country.  
If I had youth and good health I would move there,  
but my health and age are what they are  
so  
it seems to me that all that is left for me in this life is  
to leave my thoughts on the web for anyone who cares to consider them.

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To the few (you know who you are) who helped me with my efforts in life,  
I owe whatever success I have had to you, so I give you ... THANKS.

To the many (you also know who you are) who made my road of life rougher than it would otherwise have  
been, due to your pitiful minds and pitifully small hearts, I give you what you deserve ... PITY.