

Great Pumpkin and Golden Channel Higgs: 3 Higgs States consistent with ElectroWeak Gfitter

by Frank Dodd (Tony) Smith Jr.

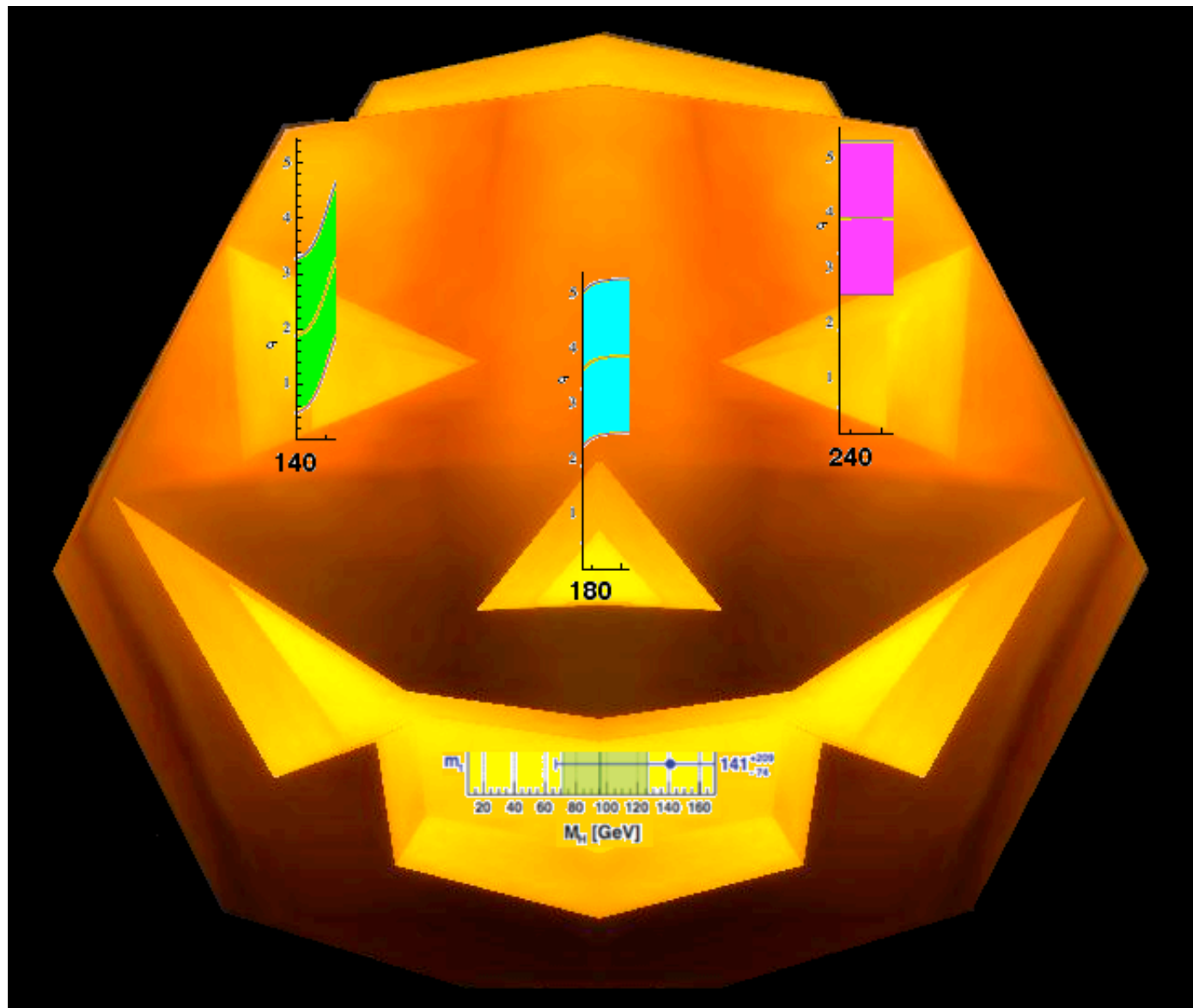
Abstract:

The Great Pumpkin by Halloween 2011 should give 5/fb of data to the LHC.
That data may support or reject my E8 Physics model with 3 Higgs-Tquark states:
low mass state (Higgs mass around 145 GeV)
middle mass state (Higgs mass around 180 GeV)
high mass state (Higgs mass around 240 GeV)
In my E8 Physics model, the Higgs is not a simple single particle but is
related to the Primitive Idempotents of the real Clifford algebra $Cl(8)$
(see vixra 1109.0037 and tony5m17h.net/ClCl4Cl16.pdf).
Such a Higgs is part of a 3-state Higgs-Tquark system
based on Higgs as a Tquark condensate similar to descriptions in
the works of Yamawaki, Hashimoto, et al in hep-ph/9603293, hep-ph0311165, etc.

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

Frank D. (Tony) Smith, Jr. - 2011

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It is likely that by end (around Halloween) of its 2011 Higgs search run at 7 TeV energy, the Great Pumpkin will have brought 5/fb of Higgs search data to the LHC. Such data may indicate the validity of my E8 Physics model with a 3-state Higgs-Tquark system

- low-mass ● Higgs state (about 140-160 GeV)
- mid-mass ● Higgs state (about 180-200GeV)
- high-mass ● Higgs state (about 240-260 GeV)

and the Higgs being related to the Primitive Idempotents of the real Clifford Algebra $Cl(8)$.

In "The Higgs "Golden Channel" at 7 TeV" at PHENO 2011: May 10, 2011 Roberto Vega-Morales said:
 "... Golden Channel: $H \rightarrow ZZ \rightarrow 4l$... Very "clean" channel due to high precision with which e and μ are measured and is fully reconstructible ... Suffers from small cross sections ... Expected significance at 7 TeV for 5/fb ..."

is shown in the Great Pumpkin eye-nose-eye plots for three possible Higgs mass states:

for 140-160 GeV the center of the green band indicates that if a Higgs is there it will be seen at about 2
 sigma

for 180-200 GeV the center of the cyan band indicates that if a Higgs is there it will be seen at about 3.5
 sigma

for 240-260 GeV the center of the magenta band indicates that if a Higgs is there it will be seen at about 4
 sigma.

The mouth of the Great Pumpkin shows that if the Tquark mass is not fixed at a single value, as it should not be so fixed in my 3-state model of the Higgs-Tquark system,

then the Gfitter electroweak fit for the Higgs mass is about 141 GeV, in the range of my low-mass
 Higgs state,

and the upper uncertainty range up to $141+209 = 350$ GeV includes

my mid-mass Higgs state and my high-mass Higgs state.

When the Golden Channel histograms for 5/fb at the LHC are released,

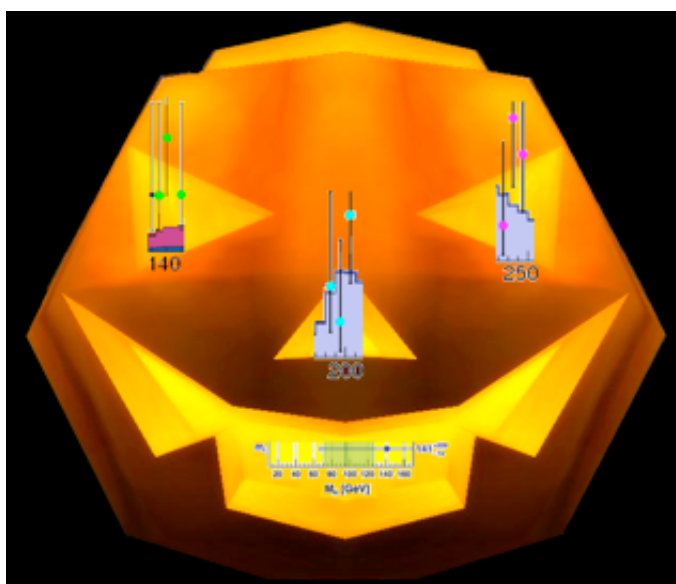
I will revise this paper by replacing

the Great Pumpkin eye-nose-eye plots of "expected significance"

with

the corresponding histogram plots

similar to these from Lepton-Photon 2011 with around 2/fb of data:



References:

[my web site](#)

[vixra 1109.0037](#) also [pdf](#) - [C1C14C116](#)

[vixra 1108.0027](#) also [pdf](#) - [Introduction to E8 Physics](#)

[vixra 1107.0044](#) also [html](#) and [pdf](#) - [EPS HEP 2011](#)

[vixra 1107.0048](#) also [pdf](#) - [Will LEE Hide the Higgs?](#)

[vixra 1108.0031](#) also [pdf](#) - [Golden Channel at 2/fb](#)