Did ATLAS CMS CERN find the last elementary particle?

Assuming the evidence from the ATLAS and CMS experiments at CERN announced 4 July 2012, the following expressions hold within the experimental error ranges (specs) :

$$\boxed{\begin{array}{l} \dfrac{m_{H^0} - m_Z}{m_Z - m_W} = \pi \\ \hline m_{H^0} - m_Z = 2\pi^2\sqrt{3} \end{array}} \tag{1}$$

where:

m_W = the mass/energy of the $W^{\pm} = 80.385 \pm 0.015$ GeV/c^2
m_Z = the mass/energy of the $Z^0 = 91.1876 \pm 0.0021$ GeV/c^2
m_{H^0} = the mass/energy of the $H^0 \approx 125.20 \pm 0.40$ GeV/c^2

$$\Rightarrow \left\{ \begin{array}{l} m_Z - m_W \approx 10.8026 \pm 0.0171 \text{ GeV/c}^2 \\ m_{H^0} - m_Z \approx 34.0124 \pm 0.4021 \text{ GeV/c}^2 \\ \dfrac{m_{H^0} - m_Z}{m_Z - m_W} \approx 3.1496121304130487104956214244719 \\ \pi = 3.1415926535897932384626433832795 \\ 2\pi\sqrt{3} = 10.882796185405307103564469545853 \\ 2\pi^2\sqrt{3} = 34.189312546584338229485945702847 \end{array} \right\}$$

So:

$$2\pi^2\sqrt{3} = m_{H^0} - m_Z = \pi(m_Z - m_W)$$
$$\Rightarrow 2\pi\sqrt{3} = m_Z - m_W \Rightarrow m_Z = m_W + 2\pi\sqrt{3}$$
$$\Rightarrow m_{H^0} = m_W + 2\pi\sqrt{3} + 2\pi^2\sqrt{3} = m_W + 2\pi\sqrt{3}\,(1+\pi)$$

If you look just at the mass numbers for the $W^{\pm}$ & Z^0 , $2\pi\sqrt{3}$ is out of specs for $m_Z - m_W$; but if you look at the data from [4]:

$$\frac{m_Z}{m_W} = \frac{1}{0.8819} = 1.1339154099104206826170767660733$$

But: $\dfrac{m_Z}{m_W} \approx \dfrac{91.1876}{80.385} = 1.1343857684891459849474404428687$

so the apparent 4 or 5 significant figures accuracy is really only about 3 significant figures

In fact, the data displays a variation clearly far wider than ± 0.015 GeV/c^2

Further, the data $m_Z - m_W \approx 10.4 \pm 1.4 \pm 0.8$ is in range of: $2\pi\sqrt{3}$, while: $91.1876(15) - 80.385(21) \leq 10.8197$ is not; etc.

Here is the full set of data from [4]:

80.387± 0.019 1095k 1 AALTONEN 12E CDF Epp_cm = 1.96 TeV
80.367± 0.026 1677k 2 ABAZOV 12F D0 Epp_cm = 1.96 TeV
80.401± 0.043 500k 3 ABAZOV 09AB D0 Epp_cm = 1.96 TeV
80.336± 0.055±0.039 10.3k 4 ABDALLAH 08A DLPH Eee_cm = 161–209 GeV
80.415± 0.042±0.031 11830 5 ABBIENDI 06 OPAL Eee_cm= 170–209 GeV
80.270± 0.046±0.031 9909 6 ACHARD 06 L3 Eee_cm= 161–209 GeV
80.440± 0.043±0.027 8692 7 SCHAEL 06 ALEP Eee_cm= 161–209 GeV
80.483± 0.084 49247 8 ABAZOV 02D D0 Epp_cm= 1.8 TeV
80.433± 0.079 53841 9 AFFOLDER 01E CDF Epp_cm= 1.8 TeV
(omitted):
80.413± 0.034±0.034 115k 10 AALTONEN 07F CDF Epp_cm = 1.96 TeV
82.87 ± 1.82 +0.30 -0.16 1500 11 AKTAS 06 H1 e±p → ve (ve)X, √s ≈ 300 GeV
80.3 ± 2.1 ± 1.2 ± 1.0 645 12 CHEKANOV 02C ZEUS e-p → ve X, √s=318 GeV
81.4+2.7 -2.6 ± 2.0+3.3 -3.0 1086 13 BREITWEG 00D ZEUS e+p → ve X, √s ≈ 300 GeV
80.84 ± 0.22 ±0.83 2065 14 ALITTI 92B UA2 See W/Z ratio below
80.79 ± 0.31 ±0.84 15 ALITTI 90B UA2 Epp_cm= 546,630 GeV
80.0 ± 3.3 ±2.4 22 16 ABE 89I CDF Epp_cm= 1.8 TeV
82.7 ± 1.0 ±2.7 149 17 ALBAJAR 89 UA1 Epp_cm= 546,630 GeV
81.8 + 6.0 - 5.3 ±2.6 46 18 ALBAJAR 89 UA1 Epp_cm= 546,630 GeV
89 ± 3 ±6 32 19 ALBAJAR 89 UA1 Epp_cm= 546,630 GeV
81. ± 5. 6 ARNISON 83 UA1 Eee_cm= 546 GeV
80. +10. - 6. 4 BANNER 83B UA2 Repl. by ALITTI 90B

Apparently the set of data omitted is due to excessive error range (mostly).
Even omitting this data, the lowest value (including lowest error value)
and highest value (including highest error value) are:
80.224 & 80.512 , respectively.
Centering yields: 80.368 ± 0.144 .
Using these values:

$m_Z - m_W \approx 10.8196 \pm 0.1419$GeV/c^2

$\Rightarrow 2\pi\sqrt{3} \in \left\{m_Z - m_W \approx 10.8196 \pm 0.1419\right\}$

Note also, that:

$m_W = 80.385 \pm 0.015$

$\Rightarrow 80.370 \le m_W \le 80.400$

But:

$m_W = 80.270 \pm 0.046 \pm 0.03199096$ ACHARD 06 L3

Eee_cm= 161–209 GeV

$\Rightarrow 80.19200904 \leq m_W \leq 80.34799096$

does not overlap the above stated value & range,

so the stated value & range is inconsistent with

some of it's own data.

also, although data:

$m_W = 80.440 \pm 0.043 \pm 0.02786927$ SCHAEL 06 ALEP

Eee_cm= 161–209 GeV

$\Rightarrow 80.36913073 \leq m_W \leq 80.51086927$

$m_W = 80.483 \pm 0.084492478$ ABAZOV 02D D0 Epp_cm= 1.8 TeV

$\Rightarrow 80.398507522 \leq m_W \leq 80.567492478$

are each consistent with $2\pi\sqrt{3}$

neither is consistent with the above ACHARD 06 L3 data.

(apparently an outlier skewing the data & specs low)

The simplicity of these expressions implies that if there is a charged particle akin to the H^0 as the Z^0 is to the $W^\pm$, then it's mass wold be given by:

$$m_{H^\pm} - m_{H^0} = (m_Z - m_W)\pi^m$$

$$\Rightarrow m_{H^\pm} = m_W + 2\pi\sqrt{3} + 2\pi^2\sqrt{3} + 2\pi\sqrt{3}\,\pi^{1+m}$$

$$= m_W + 2\pi\sqrt{3}\,(1 + \pi + \pi^m)$$

But what is m and how many terms should there be?

(Why doesn't Weinberg-Salam Theory + Higgs Mechanism predict equations (1) ?)

Indeed, what manifests equations (1) ? Is there some theory behind it?

Indeed, there is.

The $\mathbf{S_R}$ matrix established by the constructable R-algebra presented in my book [1], :and further developed in my book [2]; and further videos and articles precisely answers all of these questions.

The two-dimensional $\mathbf{S_R}$ matrix yields all fermions and fermion interactions, except for light, which is explained by the second depth, i.e. a $\mathbf{S_R} \times \mathbf{S_R}$ matrix. That I noted, initially, that the depth should be three, i.e. a $\mathbf{S_R} \times \mathbf{S_R} \times \mathbf{S_R}$ matrix is what manifests the intermediate envelopes $W^\pm, Z^0, H^0$ and likely $H^\pm$ (particles).

Diagramming an $\mathbf{S_R} \times \mathbf{S_R} \times \mathbf{S_R}$ matrix, denoting fermion at depth n as Rn ,
there are 3 states:

	State 0	State 1	State 2
depth	*	*	*
3		R3	R3
2	R2		R2
1	R1	R1	

Every fermion interaction involves a pair of fermions (as diagrammed above).
Every fermion interaction pair has a total charge of either 0 or 1 .
This corresponds to either how an interaction may occur if only total charge of 1 may be allowed in a State 1 configuration, but there is no base State whereby an interaction may occur without a W , Z , or H intermediate envelope energy, so does not conform to experimental data (annhilation/creation); or base state is State 0, $W^{\pm}$ is at State 1, Z^0 is at State 2 (but no H^0) .
(but this is charge independent, so inconsistent with experiment)

Diagramming an $\mathbf{S_R} \times \mathbf{S_R} \times \mathbf{S_R}$ matrix, denoting fermion at depth n charge $\pm$m as Rnm ,
there are 5 states:

	State 0		State 1	State 2	State 3	State 4
depth	*	*	*	*	*	*
3			R31	R30	R30	R31
2	R21	R20			R20	R21
1	R11	R10	R11	R10		

Here:
Base State 0 corresponds to annilation/creation or any other fermion interaction at an energy level less than m_W . (no intermediate envelope)
State 1 corresponds to a fermion interaction total charge $\pm$1 at an energy level m_W .
State 2 corresponds to a fermion interaction total charge 0 at an energy

level m_Z .
State 3 corresponds to a fermion interaction total charge 0 at an energy level m_{H^0} .
State 4 corresponds to a fermion interaction total charge ±1 at an energy level $m_{H^\pm}$.

The sequence may be:

$$2\pi\sqrt{3}\,(\pi^0 + \pi^1 + \pi^m)$$

or:

$$2\sqrt{3}\,(\pi^1 + \pi^2 + \pi^m)$$

In the 1st case: $m \sim nk^{n-1} \Rightarrow 2\pi\sqrt{3}\sum_{i=0}^{2}\pi^{ik^{i-1}} = 2\pi\sqrt{3}\,(\pi^0 + \pi^1 + \pi^{2k})$

In the 2nd case: $m \sim 2^{nk^{n-1}} \Rightarrow 2\sqrt{3}\sum_{i=1}^{3}\pi^{2^{(i-1)k^{i-2}}} = 2\sqrt{3}\left(\pi^1 + \pi^2 + \pi^{2^{2k}}\right)$

The sequence hasn't been determined uniquely, but the 3rd term may become quite large for $k \geq 1$).
When k=1:

1st case: $2\pi\sqrt{3}\sum_{i=0}^{2}\pi^{ik^{i-1}} = 107.408893127634702594281536899 83$

2nd case: $2\pi\sqrt{3}\sum_{i=0}^{2}\pi^{ik^{i-1}} = 1060.083284328640025785274063273 9$

As noted in [3], It might seem odd that a physical constant with units may be calculable, but what may be a serendipitous choice of units GeV/c^2 seems to be dimensionless.
(actually, since mass and energy are equivalent; and time and space are equivalent; that the ratio of energy to the ratio of space to time may not be arbitrary at all)

Alternatively, an $\mathbf{S_R} \times \mathbf{S_R} \times \mathbf{S_R}$ matrix diagram , denoting fermion at depth n charge ±m as Rnm:

State 0 State 1 State 2 State 3

depth	*	*	*	*	*	*
3			R31	R31	R30	R30
2	R20	R21	R21			R20
1	R10	R11		R11	R10	

Here:

Base State 0 corresponds to annilation/creation or any other fermion interaction at an energy level less than m_W . (no intermediate envelope)

State 1 corresponds to a fermion interaction total charge ±1 at an energy level m_W .

State 2 corresponds to a fermion interaction total charge 0 at an energy level m_Z .

State 3 corresponds to a fermion interaction total charge 0 at an energy level m_{H^0} .

Finally, one remarkable assignment equation between π , $2\sqrt{3}$, e , m_W :

$$m_W = 2\pi e^2 \sqrt{3} - \left(\frac{2\sqrt{3} - \pi}{\pi^2} \right) = 80.38091453746899915529660007515 4 \, .$$

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