THE SEVEN HIGGS BOSONS AND THE HEISENBERG UNCERTAINTY PRINCIPLE EXTENDED TO D DIMENSIONS

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Abstract. The proof of the existence of seven dimensions compacted in circles: the principle of uncertainty of Heisenberg extended to d dimensions; Allows us to obtain the masses of the seven Higgs bosons, including the known empirically (125.0901 GeV = mh (1)); And theorize the calculation of the mass of the boson stop quark (745 GeV)

1. The Heisenberg uncertainty principle extended to d dimensions

The well-known Heisenberg uncertainty principle says that for any function $f \in L^2(R^n)$ with $|f|_2 = 1$:

$$\int_{R^n} |x \cdot f(x)|^2 \, dx \cdot \int_{R^n} \left|\gamma \cdot \widehat{f}(\gamma)\right|^2 d\gamma \geq \frac{n^2}{4 \cdot (2\pi)^{n-1}}$$

$$\frac{\hbar}{(\triangle x)_d \cdot (\triangle p)_d} \geq \sqrt{\frac{4 \cdot (2\pi)^{d-1}}{d^2}} \; (1)$$

For one, dimension, d = 1; The known quantum value is obtained:

$$\frac{\hbar}{(\triangle x)_d \cdot (\triangle p)_d} \geq \sqrt{\frac{4 \cdot (2\pi)^{1-1}}{1^2}} \rightarrow \frac{(\triangle x)_{d=1} \cdot (\triangle p)_{d=1}}{\hbar} \geq \frac{1}{2}$$

2. The seven dimensions compacted in circles and the seven Higgs bosons

The Heisenberg uncertainty principle for seven dimensions:

$$\frac{\hbar}{(\triangle x)_{d=7} \cdot (\triangle p)_{d=7}} \geq \sqrt{\frac{4 \cdot (2\pi)^{7-1}}{7^2}} \; (2)$$

The current and less massive Higgs boson (125.0901 GeV):

Matrix of the seven Higgs bosons; Seven compacted dimensions : 7^2

$$mh1 = m_e \cdot 4 \cdot (2\pi)^6 \cdot \sin\beta = 125.0758 \; GeV \; (3)$$

$m_e = electron\, mass$; $\beta =$ Angle supersymmetry. Entropic uncertainty seven dimensions: $\frac{7 \cdot e}{2}$

$\arctan(\beta) = \frac{7 \cdot e}{2} \rightarrow \beta \simeq 84^{o}$

2.1. **The other six Higgs bosons.** Quantized Excitations of the Boson mh1:

$$mh(n) = n \cdot m_e \cdot 4 \cdot (2\pi)^6 \cdot \sin\beta \ (4)$$

$$mh(2) = 2 \cdot m_e \cdot 4 \cdot (2\pi)^6 \cdot \sin\beta = 250.15\, GeV \ (5)$$

$$mh(3) = 3 \cdot m_e \cdot 4 \cdot (2\pi)^6 \cdot \sin\beta = 375.22\, GeV \ (6)$$

$$mh(4) = 4 \cdot m_e \cdot 4 \cdot (2\pi)^6 \cdot \sin\beta = 500.3\, GeV \ (7)$$

$$mh(5) = 5 \cdot m_e \cdot 4 \cdot (2\pi)^6 \cdot \sin\beta = 625.37\, GeV \ (8)$$

$$mh(6) = 6 \cdot m_e \cdot 4 \cdot (2\pi)^6 \cdot \sin\beta = 750.45\, GeV \ (9)$$

$$mh(7) = 7 \cdot m_e \cdot 4 \cdot (2\pi)^6 \cdot \sin\beta = 875.53\, GeV \ (10)$$

3. The mass of the stop quark

$$m\widetilde{t} = m_e \cdot 4 \cdot (2\pi)^{8-1} \cdot \sin\beta \cdot \cos^2\theta_c = 745.86\, GeV \ (11)$$

Matrix of the eight gluons: 8^2

$\theta_c = \theta_{c12} = 13.04^{o} = Main\, Cabibbo\, angle$ .Mixing quarks

Thank God Almighty, creator of all things. And our Savior: Jesus Christ

References

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