

H-Class Resonance Without a Separate Fundamental Higgs Field

A One-Spaticle-Field Interpretation

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Abstract

The present framework identifies the observed Higgs-class excitation with the radial resonance of the same Sparticle field that underlies the condensation framework. No second fundamental Higgs field is introduced. The normalized radial coupling and electroweak scale are derived from the condensation quantities, giving $\lambda_{H_vss} = R_0/\pi^2 = 0.12903$, $v_{vss} = 6E_{\text{unit}}/\alpha_{vss} = 245.565$ GeV, and $m_{H_vss} = 124.75$ GeV/c².

1. One-field ontology

The Sparticle field is the underlying field. Matter and interaction states are organized excitations and condensations of that field. The observed H-class state [3,4] is its radial resonance rather than the quantum of an additional independently fundamental field.

2. Radial condensation

The radial condensation functional [1] is $E(R) = A/R^2 + BR^2 + CR + D/R$ with $A = 1/2$, $B = 0.56308$, $C = -1/3$, $D = 1$, and $R_0 = 1.27348221$. The raw curvature is $E''(R_0) \approx 3.2352$. The normalized electroweak radial coupling is $\lambda_{H_vss} = 2AR_0/\pi^2 = R_0/\pi^2 = 0.12903$.

3. Electroweak radial scale

The condensation energy unit is $E_{\text{unit}} = m_p c^2/\pi = 298.661$ MeV. The electroweak radial scale is $v_{vss} = 6E_{\text{unit}}/\alpha_{vss} = 245.565$ GeV.

4. H-class mass

The radial resonance mass is $m_{H_vss} = v_{vss}\sqrt{(2\lambda_{H_vss})} = 6m_p c^2 \sqrt{(2R_0)/(\pi^2 \alpha_{vss})} = 124.75 \text{ GeV}/c^2$. This derivation does not use the top-quark mass, the W mass, the Z mass, or the weak mixing angle as an input.

5. Relation to the electroweak sector

Within the same condensation architecture [2], $m_{Z_vss} = \pi^4 m_p$ and $m_{W_vss} = 256M$ with $M = m_p/3$ are obtained independently. Only after those two masses are fixed is $\sin^2\theta_{W_vss}$ calculated from $1 - (m_{W_vss}/m_{Z_vss})^2$. The H-class radial chain remains independent of that mass-ratio calculation.

6. Conclusions

The H-class state is therefore a radial resonance of one underlying Sparticle field. Its mass follows from the radial coupling λ_{H_vss} and scale v_{vss} , without a separate fundamental Higgs field and without using the top-quark or electroweak boson masses as inputs to the H-class mass formula.

References

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