The Godframe Theory: A Relativistically Activated Scalar Field Framework

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Abstract

We present a scalar field theory activated by relativistic energy density exceeding a threshold invariant $\Xi = \gamma \cdot \frac{m^2c^3}{\hbar}$. This conditionally engaged field contributes dynamically to curvature via a symmetry-breaking potential, driving early-universe expansion and mimicking cold dark matter after deactivation. The framework predicts observable consequences near black hole horizons and in cosmological structure formation.

1 The Frame Activation Invariant

The activation criterion is governed by:

$$\Xi = \gamma \cdot \frac{m^2c^3}{\hbar}, \quad \Xi_c = \frac{c^5}{G}$$

with $\Theta(\Xi - \Xi_c) = \frac{1}{1+e^{-k(\Xi-\Xi_c)}}$ enabling smooth scalar activation.

2 Scalar Field Lagrangian

The scalar component of the Lagrangian is:

$$\mathcal{L}_{\text{scalar}} = \Theta(\Xi - \Xi_c) \cdot \frac{\hbar c}{M_*^2} \cdot \frac{K_E^{4/3}}{V} \left[\frac{1}{2}(\partial_\mu \phi)(\partial^\mu \phi) - (\lambda\phi^4 - \mu^2\phi^2)\right]$$

3 Field Equation

The corresponding scalar field equation is:

$$\frac{K_E^{4/3} \cdot \hbar c}{M_*^2 V} \cdot \frac{e^{k\cdot\Xi}}{e^{k\cdot\Xi_c} + e^{k\cdot\Xi}} \cdot \left[\Box\phi + 4\lambda\phi^3 - 2\mu^2\phi\right] = 0$$

4 Energy-Momentum Tensor

$$T_{\mu\nu}^{(\phi)} = \begin{bmatrix} -\lambda\phi^4 + \mu^2\phi^2 + \frac{1}{2}(\partial_t\phi)^2 + \frac{1}{2}(\partial_x\phi)^2 & (\partial_t\phi)(\partial_x\phi) \\ (\partial_t\phi)(\partial_x\phi) & \lambda\phi^4 - \mu^2\phi^2 + \frac{1}{2}(\partial_t\phi)^2 + \frac{1}{2}(\partial_x\phi)^2 \end{bmatrix}$$

5 Black Hole Application

Near a Schwarzschild horizon, $\gamma \to \infty$ and $\Xi \to \infty$, triggering $\Theta(\Xi - \Xi_c) \to 1$. This suggests scalar field activation just outside the event horizon.

6 Conclusion

This framework unifies scalar field dynamics, dark matter mimicry, and inflation-like behavior using only threshold-based relativistic activation. Future simulations using CLASS or CAMB will explore cosmological implications.