

Die T0-Lagrangedichte

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Kapitel 1

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Zusammenfassung

Dieses Dokument präsentiert die vollständige Lagrangedichte der T0-Theorie, die das Standardmodell durch ein fundamentales Zeitfeld erweitert. Die T0-Lagrangedichte vereint alle Wechselwirkungen in einem eleganten mathematischen Rahmen.

1.1 Aufbau der T0-Lagrangedichte

1.1.1 Die vollständige Formulierung

Die T0-Lagrangedichte besteht aus mehreren Komponenten:

$$\boxed{\mathcal{L}_{T0} = \mathcal{L}_{SM} + \mathcal{L}_{Zeitfeld} + \mathcal{L}_{Kopplung}} \quad (1.1)$$

1.1.2 Das Zeitfeld

Das fundamentale Zeitfeld $T(x)$ gehorcht der Bewegungsgleichung:

$$\square T(x) + \lambda T(x) = J(x) \quad (1.2)$$

wobei $J(x)$ die Quellen-Dichte ist.

1.1.3 Kopplungsterme

Die Kopplung des Zeitfeldes an Materie erfolgt über:

$$\mathcal{L}_{Kopplung} = \sum_{\ell} \lambda_{\ell} \bar{\psi}_{\ell} T(x) \psi_{\ell} \quad (1.3)$$

wobei die Summe über alle Leptonenflavors läuft.

1.2 Symmetrien

1.2.1 Erhaltene Symmetrien

Die T0-Lagrangedichte erhält:

- Lorentz-Invarianz
- Lokale Eichinvarianz
- CPT-Symmetrie

1.2.2 Gebrochene Symmetrien

Neue Symmetriebrechungsmuster ergeben sich durch:

$$\langle T(x) \rangle = T_0 \neq 0 \quad (1.4)$$

was zur Masse-Generierung beiträgt.

1.3 Verbindung zum Standardmodell

1.3.1 Elektroschwache Sektor

Die T0-Erweiterung modifiziert die elektroschwache Wechselwirkung:

$$\mathcal{L}_{EW}^{T0} = \mathcal{L}_{EW}^{SM} + g_T T(x) H^{\dagger} H \quad (1.5)$$

wobei H das Higgs-Feld ist.

1.3.2 Starke Wechselwirkung

Die QCD bleibt im T0-Rahmen unverändert auf niederen Energien:

$$\mathcal{L}_{\text{QCD}}^{\text{T0}} = \mathcal{L}_{\text{QCD}}^{\text{SM}} \quad (1.6)$$

Minimalität der T0-Erweiterung

Die T0-Theorie fügt nur ein neues Feld (das Zeitfeld) und einen Parameter (ξ) zum Standardmodell hinzu, erklärt aber:

- Alle Teilchenmassen
- Anomale magnetische Momente
- Kosmologische Phänomene

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