

Théorie Quantique des Champs dans le Cadre T0

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Chapitre 1

Théorie Quantique des Champs

1.1 Introduction

La théorie quantique des champs (QFT) est le cadre théorique qui combine la mécanique quantique et la relativité restreinte. La théorie T0 étend ce cadre en introduisant le champ ξ .

1.2 Champs et Particules

En QFT, les particules sont des excitations de champs quantiques :

$$\phi(x) = \int \frac{d^3p}{(2\pi)^3} \frac{1}{\sqrt{2E_p}} (a_p e^{-ipx} + a_p^\dagger e^{ipx}) \quad (1.1)$$

title

Le champ ξ modifie cette relation :

$$\phi_\xi(x) = \phi(x) \cdot f(\xi) \quad (1.2)$$

où $f(\xi)$ encode les corrections dues à la dualité temps-masse.

1.3 Diagrammes de Feynman

Les calculs de Feynman dans le cadre T0 incluent des corrections ξ :

1. Propagateurs modifiés
2. Vertex avec facteurs ξ
3. Renormalisation simplifiée

1.4 Le Modèle Standard et au-delà

La théorie T0 suggère des extensions du Modèle Standard :

- Unification des forces fondamentales
- Explication de la hiérarchie des masses
- Résolution du problème de naturalité

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