

# Neutrinos dans la Théorie T0

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# Chapter 1

## Neutrinos

### 1.1 Introduction

Les neutrinos sont parmi les particules les plus mystérieuses de la physique. Dans le cadre de la théorie T0, leurs propriétés uniques peuvent être comprises à travers la dualité temps-masse et le paramètre  $\xi$ .

### 1.2 Oscillations des Neutrinos

Les oscillations des neutrinos entre différentes saveurs (électronique, muonique, tauonique) sont un phénomène quantique fondamental.

$$P(\nu_\alpha \rightarrow \nu_\beta) = \sin^2(2\theta) \sin^2\left(\frac{\Delta m^2 L}{4E}\right) \quad (1.1)$$

#### title

Dans la théorie T0, les oscillations des neutrinos résultent de la structure fractale de l'espace-temps :

$$\Delta m^2 = \xi^n \cdot m_{\text{Planck}}^2 \quad (1.2)$$

où  $n$  dépend de la géométrie  $\xi$ .

### 1.3 Masses des Neutrinos

La théorie T0 prédit les masses des neutrinos en fonction du paramètre  $\xi$  :

1.  $m_{\nu_1} = \xi^{a_1} \cdot m_e$
2.  $m_{\nu_2} = \xi^{a_2} \cdot m_e$
3.  $m_{\nu_3} = \xi^{a_3} \cdot m_e$

### 1.4 Neutrinos cosmiques

Les neutrinos cosmiques jouent un rôle crucial dans :

- Le fond de neutrinos cosmiques (C $\nu$ B)
- La nucléosynthèse primordiale
- La formation des structures à grande échelle

## 1.5 Prédictions testables

title

- Hiérarchie des masses des neutrinos
- Angles de mélange précis
- Violation CP dans le secteur des neutrinos

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