

# Constante de Structure Fine

Johann Pascher

2025

# Chapitre 1

## La Constante de Structure Fine dans la Théorie T0

### 1.1 Introduction

La constante de structure fine  $\alpha \approx 1/137$  est l'une des constantes fondamentales les plus mystérieuses de la physique. Dans le cadre de la théorie T0, cette constante émerge naturellement de la géométrie du champ  $\xi$ .

### 1.2 Définition et Valeur

La constante de structure fine est définie comme :

$$\alpha = \frac{e^2}{4\pi\epsilon_0\hbar c} \approx \frac{1}{137,036} \quad (1.1)$$

title

- $\alpha$  caractérise la force du couplage électromagnétique :
- Force relative entre deux électrons
  - Probabilité d'émission/absorption de photons
  - Structure des niveaux atomiques

### 1.3 Dérivation T0

Dans la théorie T0,  $\alpha$  est liée au paramètre  $\xi$  par :

$$\alpha = f(\xi) = \xi^n \cdot g(\text{facteurs géométriques}) \quad (1.2)$$

où  $n$  et  $g$  sont déterminés par la structure fractale de l'espace-temps.

### 1.4 Relations avec d'autres constantes

La théorie T0 unifie  $\alpha$  avec :

1. La constante gravitationnelle  $G$

2. La constante de Planck  $\hbar$
3. La vitesse de la lumière  $c$
4. Les masses des particules

## 1.5 Prédictions testables

title

- Variation de  $\alpha$  avec l'énergie
- Corrélation avec les anomalies magnétiques
- Effets sur les transitions atomiques de haute précision

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