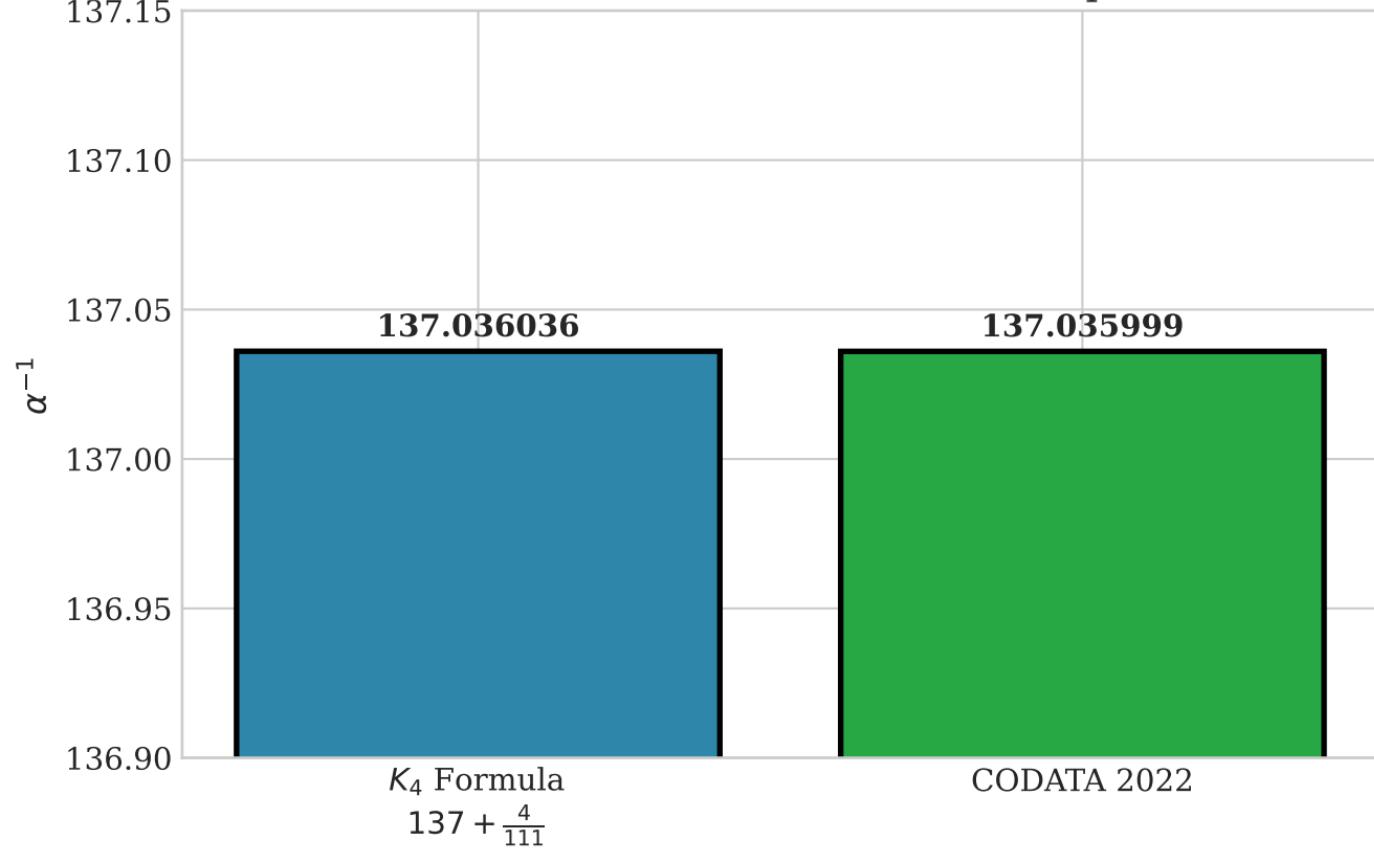


## Derivation Details

### Fine Structure Constant: Formula vs Experiment



#### DERIVATION BREAKDOWN

$$\text{Integer part: } \lambda^3 \chi + \deg^2 = 4^3 \times 2 + 3^2 = 128 + 9 = 137$$

$$\begin{aligned}\text{Correction: } & V / (\deg \times (E^2 + 1)) \\ &= 4 / (3 \times 37) \\ &= 4 / 111 \\ &= 0.036036036\dots\end{aligned}$$

$$\text{Total: } 137 + 4/111 = 137.036036\dots$$

CODATA 2022: 137.035999177(21)

Agreement: 0.000027%  
( $3.7 \times 10^{-5}$  difference)

The denominator 111 =  $\deg \times (E^2 + 1) = 3 \times 37$   
is DERIVED from K<sub>4</sub> via one-point compactification.