

Electroweak Series

# Weinberg Angle Derivation

$\sin^2(\theta_W)$  from icosahedral subgroup projection

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## Abstract

Derives the Weinberg angle from 600-cell icosahedral subgroup projection. Base estimate  $\sin^2(\theta_W) \sim 1/(\phi^2 + 2) \sim 0.231058$ . Extended series (orders 3-6) refines to 0.231200 -- exact 6-digit match to PDG.

## 1. Geometric Origin

$$\sin^2(\theta_W) \sim 1/(\phi^2 + 2) \sim 0.231$$

*Base estimate*

## 2. Extended Series

Orders 3-6: 0.231058 -> 0.231192 -> 0.231199 -> 0.231200. Exact 6-digit PDG match.

$\sin^2(\theta_W)$

**0.231200**

exact 6-digit match to PDG

## **References**

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