=== Muon (μ^-) QUANTUM RESONANCE ANALYSIS ===

Using constants: LZ_s
LZ: 1.2349822800
HQS: 0.2355012867
Resonance function: **quantum_cos(0.08)**
n range: 0.0 to 12.0 (step: 0.001)
Resonance states found: 1197

State 1: 106
State 2: 107
State 3: 108
State 4: 109
State 5: 110
State 6: 111
State 7: 112
State 8: 113
State 9: 114
State 10: 115
State 11: 116
State 12: 117
State 13: 118
State 14: 119
State 15: 120
State 16: 121
State 17: 122
State 18: 123
State 19: 124
State 20: 125
... and 1177 more states

Observed states: [105.66, 211.32, 422.64]

Prediction accuracy: 3/3 states matched
Matched states (observed, predicted):
105.66 -> 106
211.32 -> 191
422.64 -> 381

=== Tau (τ^-) QUANTUM RESONANCE ANALYSIS ===

Using constants: LZ_s
LZ: 1.2349822800
HQS: 0.2355012867
Resonance function: **quantum_cos(0.01)**
n range: 0.0 to 12.0 (step: 0.001)
Resonance states found: 10314

State 1: 1777
State 2: 1778
State 3: 1779
State 4: 1780
State 5: 1781
State 6: 1782
State 7: 1783
State 8: 1784
State 9: 1785
State 10: 1786
State 11: 1787
State 12: 1788
State 13: 1789
State 14: 1790
State 15: 1791
State 16: 1792
State 17: 1793
State 18: 1794
State 19: 1795
State 20: 1796
... and 10294 more states

Observed states: [1776.86, 3553.72, 7107.44]

Prediction accuracy: 3/3 states matched
Matched states (observed, predicted):
1776.86 -> 1777
3553.72 -> 3199
7107.44 -> 6398

=== Strange Quark (s) QUANTUM RESONANCE ANALYSIS ===

Using constants: LZ_s
LZ: 1.2349822800
HQS: 0.2355012867
Resonance function: **quantum_cos(0.6)**
n range: 0.0 to 24.0 (step: 0.001)
Resonance states found: 9873

State 1: 95
State 2: 96
State 3: 97
State 4: 98
State 5: 99
State 6: 100
State 7: 101
State 8: 102
State 9: 103
State 10: 104
State 11: 105
State 12: 106
State 13: 107
State 14: 108
State 15: 109
State 16: 110
State 17: 111
State 18: 112
State 19: 113
State 20: 114
... and 9853 more states

Observed states: [95.0, 190.0, 285.0]

Prediction accuracy: 3/3 states matched
Matched states (observed, predicted):
95.0 -> 95
190.0 -> 172
285.0 -> 257

=== W/Z Bosons QUANTUM RESONANCE ANALYSIS ===

Using constants: LZ_s
LZ: 1.2349822800
HQS: 0.2355012867
Resonance function: **quantum_cos(0.8)**
n range: 0.0 to 24.0 (step: 0.001)
Resonance states found: 17369

State 1: 80400
State 2: 80417
State 3: 80434
State 4: 80451
State 5: 80468
State 6: 80485
State 7: 80502
State 8: 80519
State 9: 80536
State 10: 80553
State 11: 80570
State 12: 80587
State 13: 80604
State 14: 80621
State 15: 80638
State 16: 80655
State 17: 80672
State 18: 80689
State 19: 80706
State 20: 80723
... and 17349 more states

Observed states: [80400.0, 91100.0]

Prediction accuracy: 2/2 states matched
Matched states (observed, predicted):
80400.0 -> 80400
91100.0 -> 81994

=== Up Quark (u) QUANTUM RESONANCE ANALYSIS ===

Using constants: LZ_s
LZ: 1.2349822800
HQS: 0.2355012867
Resonance function: quantum_well(0.8)
n range: 0.0 to 24.0 (step: 0.001)
Resonance states found: 347

State 1: 2
State 2: 3
State 3: 4
State 4: 5
State 5: 6
State 6: 7
State 7: 8
State 8: 9
State 9: 10
State 10: 11
State 11: 12
State 12: 13
State 13: 14
State 14: 15
State 15: 16
State 16: 17
State 17: 18
State 18: 19
State 19: 20
State 20: 21
... and 327 more states

Observed states: [2.2, 4.4, 6.6]

Prediction accuracy: 3/3 states matched
Matched states (observed, predicted):
  2.2 -> 2
  4.4 -> 4
6.6 -> 6

=== Down Quark (d) QUANTUM RESONANCE ANALYSIS ===

Using constants: LZ_s
LZ: 1.2349822800
HQS: 0.2355012867
Resonance function: quantum_cos(0.08)
n range: 0.0 to 24.0 (step: 0.01)
Resonance states found: 666

State 1: 5
State 2: 6
State 3: 7
State 4: 8
State 5: 9
State 6: 10
State 7: 11
State 8: 12
State 9: 13
State 10: 14
State 11: 15
State 12: 16
State 13: 17
State 14: 18
State 15: 19
State 16: 20
State 17: 21
State 18: 22
State 19: 23
State 20: 24
... and 646 more states

Observed states: [4.7, 9.4, 14.1]

Prediction accuracy: 3/3 states matched
Matched states (observed, predicted):
  4.7 -> 5
  9.4 -> 9
14.1 -> 13