

Mathematica Stone Validation 2

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(*Define Lumin Equation Variables*)ClearAll[C, M, \[CurlyPhi],
\[Omega], t, S, \[Phi], feedback, \[Psi], mc2]

(*Core Parameters*)
M = 1; (*Organizing principle:coherence driver*)
\[CurlyPhi] = (1 + Sqrt[5])/2; (*Golden ratio scaling*)
\[Omega] = 1; (*Angular frequency*)
S = \[Pi]/4; (*Symmetry constant*)
\[Phi] = \[Pi]/6; (*Phase shift*)
feedback[i_] := 0.2 (i - 1); (*Feedback mechanism*)
\[Psi][i_] := Sin[i]; (*Resonance function*)
mc2 = 1; (*Relativistic energy constant*)

(*Define the Lumin Equation*)
LuminEquation[t_, i_] :=
  M \[CurlyPhi]^i (Sin\[Omega] t + S + Cos\[Omega] t + \[Phi])) +
  \[Psi][i] + feedback[i] + mc2

(*Annotated Oscillatory Dynamics*)
Manipulate[
  Plot[{Sin\[Omega] t + S, Cos\[Omega] t + \[Phi]}], {t, 0, 10},
  PlotRange -> {-2, 2}, AxesLabel -> {"Time (t)", "Amplitude"},
  PlotLegends -> {"Sin\[Omega]t + S", "Cos\[Omega]t + \[Phi]"},
  Epilog -> {Text[Style["Frequency (\[Omega])", Bold, Blue], {5, 1.5}],
    Text[Style["Phase Shift (\[Phi], S)", Bold, Green], {2, -
1}]}],
  {{\[Omega], 1}, 0.1, 5, "Frequency (\[Omega])"},
  {{S, \[Pi]/4}, 0, \[Pi], "Symmetry Constant (S)"},
  {{\[Phi], \[Pi]/6}, 0, \[Pi], "Cosine Phase Shift (\[Phi])"}]

(*Feedback Mechanism with Labels*)
feedbackFunction[state_, target_] := state + 0.1 (target - state);

DynamicModule[{state = RandomReal[{-1, 1}, 10], target = 0},
  Manipulate[
    ListLinePlot[NestList[feedbackFunction[#, target] &, state, 50],
      PlotRange -> {{0, 50}, {-1, 1}},
      AxesLabel -> {"Iteration", "System State"}, PlotStyle -> Thick,
      Epilog -> {Text[Style["Feedback Strength Stabilizes System", Bold,
Red], {25, 0.8}],
        Text[Style["Initial Chaos", Bold, Black], {5, 0.6}]}],
    {{target, 0}, -1, 1, "Target State"}]]

(*Harmonic Scaling with Refined Range*)
goldenFractal[n_] := Table[{\[CurlyPhi]^i Cos[i], \[CurlyPhi]^i
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Sin[i]], {i, 0, n, 0.1}] /. \[CurlyPhi] -> (1 + Sqrt[5])/2;

Graphics[Line[goldenFractal[50]], PlotRange -> {{-5, 5}, {-5, 5}}, Axes
-> True,
  AxesLabel -> {"X", "Y"}, Epilog -> {Text[Style["Golden Ratio Scaling
\[CurlyPhi]", Bold, Blue], {0, 4}]}]

(*Tesla's 3,6,9 Harmonics*)
Manipulate[
  Plot[Sin[3 \[Omega] t] + Sin[6 \[Omega] t] + Sin[9 \[Omega] t], {t, 0,
10},
  PlotRange -> {-3, 3}, AxesLabel -> {"Time (t)", "Amplitude"},
  PlotLegends -> {"3\[Omega]", "6\[Omega]", "9\[Omega]"},
  Epilog -> {Text[Style["Tesla Harmonics: 3, 6, 9", Bold, Green], {5,
2}]}],
  {{\[Omega], 1}, 0.1, 5, "Frequency (\[Omega])"}]

(*Composite Visualization*)
DynamicModule[{state = RandomReal[{-1, 1}, 10], \[CurlyPhi] = (1 +
Sqrt[5])/2, \[Omega] = 1, tmax = 10},
  Manipulate[
    GraphicsRow[{Plot[Sin\[Omega] t + S + Cos\[Omega] t + \[Phi]], {t,
0, tmax},
      PlotRange -> {-2, 2}, AxesLabel -> {"Time (t)", "Oscillations"},
      PlotStyle -> Thick,
      Epilog -> {Text[Style["Oscillations (Sin + Cos)", Bold, Blue], {5,
1.5}]}],
      ListLinePlot[NestList[# + 0.1 (0 - #) &, state, 50],
        PlotRange -> {{0, 50}, {-1, 1}}, AxesLabel -> {"Iteration",
"Feedback"},
        Epilog -> {Text[Style["Feedback Stabilization", Bold, Red], {25,
0.8}]}],
      Graphics[Line[Table[{\[CurlyPhi]^i Cos[i], \[CurlyPhi]^i Sin[i]},
{i, 0, 10, 0.1}]],
        PlotRange -> {{-5, 5}, {-5, 5}}, Axes -> True,
        Epilog -> {Text[Style["Golden Ratio Scaling", Bold, Blue], {0,
4}]}]}],

(*Quantitative Analysis Table*)
TableForm[Table[{t, i, LuminEquation[t, i]}, {t, 0, 10, 1}, {i, 1, 5}],
  TableHeadings -> {"Time (t)", "Index (i)", "Coherence (C_i)"}]]

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