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A Nonlinear Mathematical Model of Undone, Probable, and Completed Future States

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Abstract

This paper presents a theoretical mathematical framework based on the relation $y - x = y^2$. The framework distinguishes between three conceptual states: the Undone Future, the Probable Future, and the Completed Future. The model generates a nonlinear future-state structure with branching solutions and a critical convergence point.

Keywords: Nonlinear Modeling, Mathematical Model, Future States, Quadratic Equation, Nonlinear Equation, Solution Branches, Critical Point, Convergence, State Transitions, State-Space Modeling

Introduction

The model begins from the idea that future states can be represented mathematically as transitions between unresolved and completed outcomes. Instead of treating the future as a single unknown value, the framework organizes it into stages.

Definitions

$F0 = -x$ (Undone Future)
$F1 = y - x$ (Probable Future)
$F2 = y^2$ (Completed Future)
Constraint: $F1 = F2$

Core Equation

Setting $F1 = F2$ gives $y - x = y^2$. Rearranging gives $y^2 - y + x = 0$.

Solution Structure

Applying the quadratic formula gives $y = (1 \pm \sqrt{(1-4x)})/2$. The model therefore contains two mathematical branches whenever $x \leq 1/4$.

Theoretical Interpretation

The variable x represents unresolved future content. The variable y represents a future-state variable. The completed future is represented by y^2, introducing nonlinearity into the transition process. The model can therefore be interpreted as a resolution pathway from an undone state to a completed state.

Critical Point

At x = 1/4 the two solution branches merge at y = 1/2. This acts as a convergence point within the mathematical structure.

Geometrical Form

Rewriting the equation as $x = y - y^2$ produces a parabola. The maximum value of x occurs at y = 1/2, giving x = 1/4.

Future-State Space

The future-state space is defined as F = {F0, F1, F2}. Admissible states satisfy $y - x - y^2 = 0$.

Dynamic Extension

A future extension of the theory may allow x=x(t) and y=y(t), converting the framework into a dynamical system while preserving the original constraint.

Testable Predictions

The model predicts two real branches when $0 < x < 1/4$, a single converged state at x = 1/4, and no real solutions when x > 1/4.

Scientific Status

The framework is a mathematical hypothesis. It is not established as a law of physics and would require empirical testing, measurable variables, and experimental validation.

Conclusion

The equation $y - x = y^2$ provides a nonlinear mathematical framework for representing transitions between undone, probable, and completed future states. The theory offers a structured basis for further mathematical and empirical investigation.

References

- Einstein, A. (1905). On the Electrodynamics of Moving Bodies.
- Putnam, H. (1967). Time and Physical Geometry.
- Strogatz, S. H. (2015). Nonlinear Dynamics and Chaos.
- Prigogine, I. (1997). The End of Certainty.

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