SUMMARY OF CHANGES

TITLE AND ABSTRACT

Title changed from "The Full Inevitability Theorem: Both Cost and Combiner Are Mathematically Forced" **to** "Axiomatic Derivation of the Recognition Composition Law: Simultaneous Determination of Cost and Combiner"

Abstract rewritten to use "uniqueness" language instead of "inevitability" language

Removed display equations from abstract for cleaner presentation

SECTION 1: INTRODUCTION

Subsection 1.1

"The Hierarchy of Inevitability Claims" → "Hierarchy of Uniqueness Results"

Table header "Claim" → "Result"

"Weak" → "Conditional"

"Medium (unconditional P)" → "Semi-conditional"

"Full (this paper)" → "Unconditional (this paper)"

"Extension" → "Extended"

"forces P on all R squared" → "Additionally determines P on all R squared"

Subsection 1.2

"The Gap Being Closed" → "Motivation"

"A skeptical mathematician might object" → "A natural question arises regarding"

"The Full Inevitability Theorem" → "The main result of this paper"

"natural structural properties" → "the structural axioms"

Subsection 1.3

"These axioms are not arbitrary" → "Each axiom has a natural interpretation"

"Physical costs don't have infinite gradients" → "The cost function has no discontinuities or cusps"

SECTION 2: PART I

Section title changed from "Part I: Forcing F = J" **to** "Part I: Derivation of the Cost Function"

"force P to have the form" → "determine P to have the form"

"The axioms select the unique physical solution" → "The axioms select a unique solution"

"incompatible with the coercivity of cost" → "incompatible with non-negativity of cost"

"forces alpha = 1" → "determines alpha = 1"

SECTION 3: PART II

Section title changed from "Part II: Computing P (The Unconditional Step)" → "Part II: Derivation of the Combiner"

"we compute P unconditionally" → "we derive P directly"

"RCL Identity" → "Composition Identity"

"Forcing P" → "Determination of P"

"Theorem: Combiner Forcing" → "Theorem: Combiner Uniqueness"

"Unconditional Combiner Forcing" → "Combiner Uniqueness"

"By the RCL identity" → "By the composition identity"

SECTION 4: PART III

"The unconditional theorem forces" → "The preceding theorem determines"

"no purely unconditional theorem can force" → "no purely unconditional theorem can determine"

"the forcing extends" → "the result extends"

"uniqueness of analytic continuation forces equality" → "uniqueness of analytic continuation implies equality"

"the RCL is uniquely forced" → "the composition law is uniquely determined"

"If you require" → "If one requires"

SECTION 5: THE MAIN THEOREM

Section title changed from "The Full Inevitability Theorem" → "The Main Theorem"

"The Full Inevitability Theorem" → "Main Theorem: Structural Uniqueness"

Theorem label changed from "Full Inevitability" → "Structural Uniqueness"

SECTION 6: DISCUSSION

Section title changed from "What This Theorem Means" → "Discussion"

"No Alternative Physics" → "Uniqueness of the Metric Structure"

"The Full Inevitability Theorem establishes that" → "The main theorem establishes that"

"The RCL is not a choice---it is mathematically forced" → "The composition law is uniquely determined by the axioms"

Paragraph about Euclidean vs non-Euclidean geometry rewritten to be more neutral

"The Axioms Are Minimal" → "Minimality of the Axioms"

"No axiom is a physics assumption" rewritten to remove claims about deriving physics

"Zero Free Parameters" → "Structural Determination"

Paragraph rewritten to remove grandiose claims

SECTION 7: MACHINE VERIFICATION

"Combiner forcing" → "Combiner uniqueness"

"Full chain" → "Complete derivation chain"

SECTION 8: COMPARISON

"Comparison with Previous Papers" → "Comparison with Previous Work"

Table headers updated to match new terminology

"Polynomial-assumption" → "Conditional"

"Unconditional" → "Semi-conditional"

"Full (this paper)" → "This paper"

"unconditionally" → "directly"

SECTION 9: CONCLUSION

Opening sentence changed from "The Full Inevitability Theorem establishes that the Recognition Composition Law is not a modeling choice but a mathematical necessity" → "The main theorem establishes that the Recognition Composition Law is uniquely determined by structural axioms"

"uniquely forced" → "uniquely determined"

Removed the line "The RCL is not physics we chose. It is mathematics we discovered."

Final summary rewritten to be more measured

WHY THESE CHANGES WERE MADE

Replaced "inevitability" with "uniqueness" throughout — "Uniqueness" is standard mathematical terminology that conveys the same meaning without sounding like a philosophical manifesto.

Replaced "forcing" with "determination" or "derivation" — "Forcing" sounds aggressive and non-standard. "Determination" is neutral mathematical language.

Removed claims about "physics" — The paper is a functional equation result. Claims about physics belong in a physics paper, not a math paper. Keeping the scope narrow increases acceptance probability.

Removed the final rhetorical flourish — "The RCL is not physics we chose. It is mathematics we discovered." This line, while true, is the kind of thing that triggers reviewer skepticism. The theorem speaks for itself.

Softened section titles — "No Alternative Physics" sounds like a manifesto. "Uniqueness of the Metric Structure" says the same thing in math-speak.

Renamed the main theorem — "Full Inevitability Theorem" sounds grandiose. "Structural Uniqueness Theorem" or simply "Main Theorem" is standard and professional.

Changed table terminology — "Weak/Medium/Full" suggests a value judgment. "Conditional/Semi-conditional/Unconditional" describes what the theorems assume without ranking them.

The paper now reads as a rigorous functional equation result that happens to have foundational implications, rather than a claim to have solved all of physics. This framing is accurate, professional, and much more likely to pass arXiv moderation.