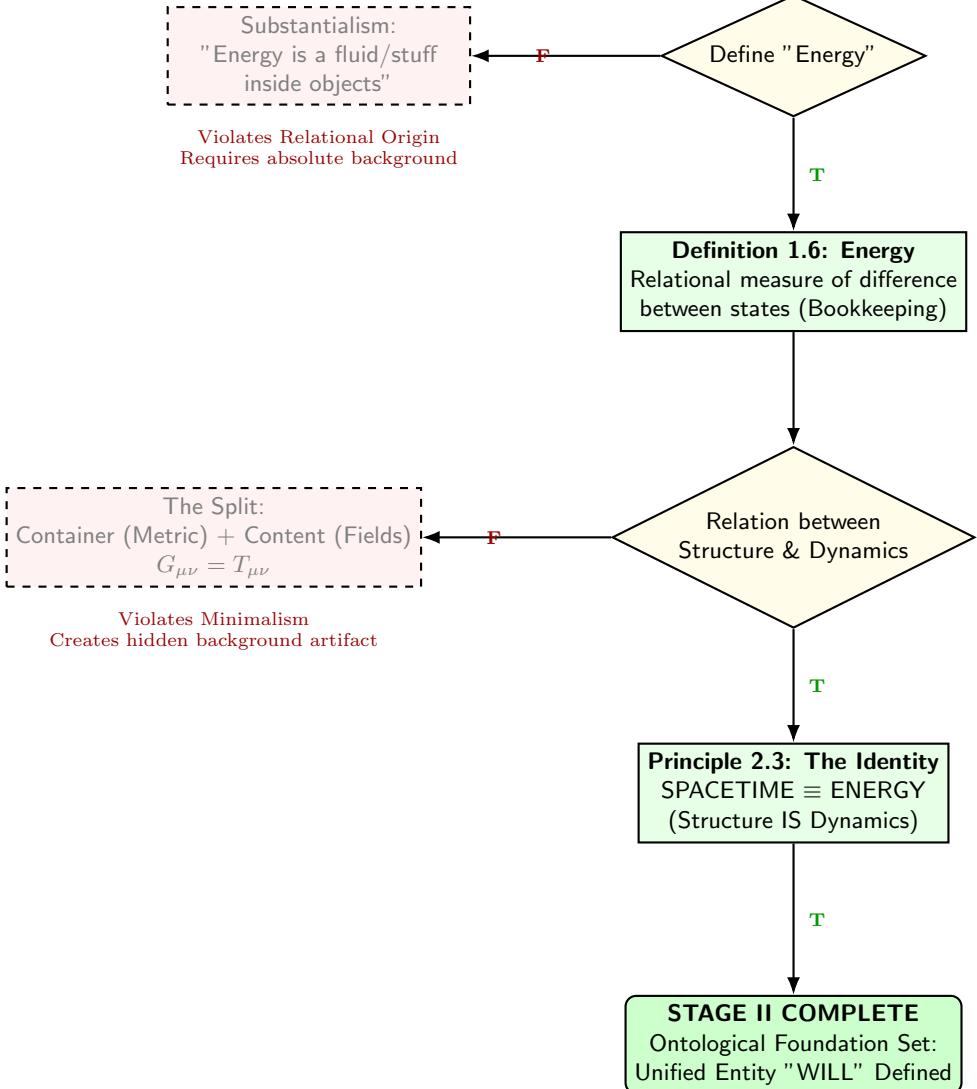


INPUT FROM STAGE I
Methodology Established:
(No Hidden Assumptions, Relational Only)



INPUT FROM STAGE II
Ontology: SPACETIME \equiv ENERGY
(Unitary Relational Entity)

Derived Constraints

1. Closure (No leakage) \rightarrow Lemma 3.1
2. Conservation (Fixed Budget) \rightarrow Lemma 3.2
3. Isotropy (Max Symmetry) \rightarrow Lemma 3.3

Open Manifolds
(Infinite Flat Space)

Violates Closure

Select Minimal Relational Carriers

T

Logical Step (Theorem 3.4 Proof):

1. **Directional Relation** ($A \rightarrow B$):
Requires 1 DOF Unique Constraint 1-Carrier:
 S^1
2. **Omnidirectional Relation** (Center \rightarrow Field):
Requires 2 DOF Unique Constraint 2-Carrier:
 S^2

Scalar Parameter
(Energy as Substance)

Impossible in relational model.
State requires Reference vs. Internal

Define State on Carriers (S^1, S^2)

T

Lemma 6.1: Duality of Evolution
State \equiv Superposition of Orthogonal Axes:
1. **Amplitude** (External Interaction)
2. **Phase** (Internal Existence)

Thm 6.2 & 11.1: Orthogonal Conservation
Unitary Budget Pythagorean Closure
 S^1 (Kinematics): $\beta^2(Motion) + \beta_Y^2(SpaceTime) = 1$
 S^2 (Gravity): $\kappa^2(Potential) + \kappa_X^2(TimeSpace) = 1$

Determine Exchange Rate
between Active Amplitudes (κ^2, β^2)

T

Theorem 10.2: Energetic Closure
$$\mathcal{R} = \frac{d.o.f(S^2)}{d.o.f(S^1)} = \frac{2}{1} = 2$$

$$\kappa^2 = 2\beta^2$$

T

STAGE III COMPLETE

Geometry Defined:
Energy flows between Orthogonal Axes
and between Carriers ($S^1 \leftrightarrow S^2$)

INPUT FROM STAGE III
 Geometry Defined:
 Orthogonal Conservation Laws on S^1 & S^2

Independent Parameter
 (Mass as intrinsic substance)

Ontologically redundant

Define Physical Meaning of
 Vertical Projection (β_Y)

Def 7.1 & Thm 7.2: Self-relation (Motion=0) → Invariant Mass
 Vertical Projection \equiv Rest Existence
 $E \cdot \beta_Y = E_0 \equiv m$
 $\gamma = 1/\beta_Y$

Corollary 7.3: Energy-Momentum

Apply Pythagoras to S^1 Closure:
 $(E\beta)^2 + (E\beta_Y)^2 = E^2$
 Identify $p \equiv E\beta$, $m \equiv E\beta_Y$
 $E^2 = p^2 + m^2$

Weak Equivalence Principle
 (Postulated as Axiom)

Descriptive physics
 (Coincidence)

Explain $m_i = m_g$

Theorem 12.2: Unified Scaling
 Kinematics (S^1) and Gravity (S^2)
 act on the SAME invariant E_0 .

$$m_i \equiv m_g \equiv E_0$$

$$\theta_1 = \arccos(\beta), \quad \theta_2 = \arcsin(\kappa)
\kappa^2 = 2\beta^2 \text{ (Closure)}$$

| Algebraic Form | Trigonometric Form |
|----------------------------------|-----------------------------|
| $\beta = v/c$ | $\beta = \cos(\theta_1)$ |
| $\kappa = \sqrt{R_s/r}$ | $\kappa = \sin(\theta_2)$ |
| $\beta_Y = \sqrt{1 - \beta^2}$ | $\beta_Y = \sin(\theta_1)$ |
| $\kappa_X = \sqrt{1 - \kappa^2}$ | $\kappa_X = \cos(\theta_2)$ |

STAGE IV COMPLETE
 Physics Derived:
 SR/GR effects are geometric projections
 of invariant Rest Energy

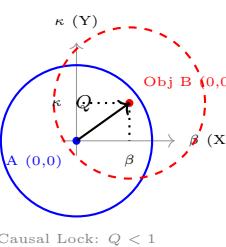
INPUT FROM STAGE IV
Physics Derived:
Invariant Mass & Unified Scaling Established

Define Interaction Measure
(Distance/Difference)

Spatial Distance
(Metric ds^2 in background)

F

Violates Relational Origin
(Sec 10)



Forces / Potentials
(Newton, Lagrange, Hamiltonian)

F

Ontologically "dirty" approximations
Collapse 2-point relation to 1-point
(Sec 15)

Sec 10: Relational Displacement
Self-Centering Reciprocity:
 $Q^2 = \beta^2 + \kappa^2$
Norm of deviation from observer

Define Interaction Mechanism
(Dynamics)

Theorem 14.1: Energy-Symmetry Law
Causal Continuity:
 $\Delta E_{A \rightarrow B} + \Delta E_{B \rightarrow A} = 0$
Transfers must sum to zero

Hypothetical Observer
at Infinity (∞)

Idealized/Non-existent.
leads to Gauge Ambiguities

Define "Zero Point"
(Reference System)

T

Self-Centering Principle
Zero is ALWAYS the state of
a local relational frame (A or B)

Formalisms L, H
Energy as intrinsic scalar
at a single point

Ontologically "murky".
Mathematically inflated.
(Collapse of 2-point relation)

Formalize Energy Description

T

Explicit Transition Cost
Energy as Work of Translation
from State A to State B
 $\Delta E_{A \rightarrow B}$

T

STAGE V COMPLETE
Dynamics Defined:
Motion is the payment of energy cost
to maintain Causal Symmetry

INPUT FROM STAGE V
Dynamics Defined:
Motion is Algebraic Necessity

If Method F was chosen

Result of Method T

EFFECTS OF BAD PHILOSOPHY
(Descriptive Physics)

1. Inflated Formalism: Equations multiply to hide ontological errors.
2. Loss of Transparency: Meaning hidden behind coordinates.
3. Fragmentation: Separate constants for every domain.

EFFECTS OF GOOD PHILOSOPHY
(Epistemic Hygiene)

1. **Simplicity:** Complexity collapses into geometry.
2. **Transparency:** 1 Symbol = 1 Idea.
3. **Unity:** Scale invariance from Quantum to Cosmic.

GENERAL CONSEQUENCE:

**"Mathematical complexity is the symptom
of philosophical negligence."**

Once ontological symmetry is restored, **Nature's laws reduce to algebraic self-consistency.**