LMR Position Paper 0

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What Length–Mass Reduction Is — and Is Not

Purpose

Length–Mass Reduction (LMR) is a structured theoretical program that reorganizes physical description at the level of dimensional grammar.

It is presented as a codex: a fixed sequence of definitions, notation rules, structural constraints, and admissibility conditions established across Papers I–V.

The purpose of this note is to state, in direct terms, what LMR does and what it does not do.

What LMR Is

LMR is a predynamical structural framework.

It establishes:

- A dimensional grammar in which structural quantities are organized through admissibility rather than dynamical evolution,
- A lattice-based account of persistence and constraint,
- A representation in which mass appears through inverse structural length on the A-side of the grammar,
- A projection layer in which unresolved structural asymmetry becomes externally legible,
- A normalization framework governing persistence support.

Within this framework, the electron and proton appear as minimal persistent configurations, while hydrogen and the neutron arise as composite persistent configurations within the same admissibility structure. Their characteristic mass–length relations are expressed through inverse structural length. Numerical correspondences — including the neutron mean lifetime and the hydrogen spectral structure — arise from admissibility conditions and corridor relations without parameter fitting to those results. These correspondences follow from

admissibility and corridor structure. They are not introduced as empirical laws and do not require dynamical mechanisms.

These components are constructed in sequence and form a single ordered system.

They are not independent proposals.

What LMR Is Not

LMR does not introduce:

- Forces as primitive entities,
- Fields as explanatory mechanisms,
- Dynamical laws at the foundational level,
- A reinterpretation of established physical theories,
- A replacement for quantum mechanics, relativity, or field theory.

LMR does not introduce new empirical predictions as primary results of the foundational layer. Structural correspondences with measured quantities may arise as consequences of the framework and are identified where they occur.

It does not modify measured values.

It does not claim new empirical results at the level of Papers I–V.

On Dimensional Reduction

Within the LMR program, dimensional reduction (lm-reduction) is used to rewrite standard SI expressions in kilogram-free form through the bridge quantity

$$\ell_m = \frac{h}{c}.$$

This procedure is exact and reversible.

It does not introduce new physical content.

It does not establish structural necessity.

It does not derive the foundational grammar.

It belongs to a separate correspondence layer and must not be read backward into the structural codex.

On Mass and Length

The relation

$$M' = \frac{m}{\ell_m}, \qquad M' = \frac{1}{\lambda_C}$$

is an algebraic identity derived from the SI definition of the Compton wavelength.

Within LMR, this identity is used as a representational bridge.

It is not a claim about the ontology of mass.

It does not assert that mass is fundamentally geometric.

It states that mass and inverse length may be represented in a reciprocal form under a fixed dimensional substitution.

On Structure and Representation

LMR separates three layers:

- Structural grammar (Tier 1),
- Observer-side overlays (Tier 2),
- Dimensional correspondence (Tier 3).

Each layer is internally consistent but not interchangeable.

- Structural grammar does not determine a unique dynamical realization,
- Overlay equations do not define structural ontology,
- Dimensional reduction does not derive structural rules.

No statement in one tier may be used to infer results in another tier without explicit declaration.

Interpretive Boundary

LMR provides a framework for organizing structural relations.

It does not, at the foundational level, explain physical phenomena in terms of forces, fields, or dynamics.

Any extension of LMR into predictive or empirical domains requires additional work beyond the codex.

Summary

LMR is a structural program, not a dynamical theory.

It establishes a disciplined grammar within which persistence, projection, and normalization are expressed as relations among admissible configurations.

It does not introduce new physical laws.

It does not alter existing predictions.

It reorganizes the representation of known physics while maintaining strict separation between structure, overlay, and correspondence.