The Æther-flow Interpretation of Relativity Ontology: Flagship Public Article

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Abstract

This article is a single-entry public synthesis of Æther-flow Interpretation of Relativity built on the active exact-closure manuscript sequence. Its job is not to replace that sequence, but to make it readable to first-time visitors, technically trained readers, and future collaborators. The central public message is simple. The flagship deliverable of the repository is already the overview-first exact-closure package centered on the *Exact-Closure Sequence Overview*. Within that package, the effective gravitational dynamics are adopted to be exactly those of general relativity with universal matter coupling, while the Æther / Æther-flow ontology supplies the interpretive and conceptual setting. At observable scale, the benchmark package is operationally identical to ordinary GR: Einstein–Hilbert dynamics, one operative metric, universal matter coupling, ordinary diffeomorphism gauge structure, standard null / proper-time / redshift structure, and no extra preferred-frame, vector, or scalar graviton sector. Its late-time cosmological completion is correspondingly conservative: the ordinary cosmological constant or an equivalent GR-compatible dark-energy stress tensor inside the same one-metric law. It is therefore not Einstein-aether theory, not Hořava gravity, and not a new low-energy alternative to GR.

The article makes five points explicit. First, the active theory statement is exact relativistic closure, not a low-energy deformation of GR. Second, the Æther / Æther-flow language is retained in disciplined ontological form through the notions of underlying substrate, intrinsic ordered motion, observed three-dimensional space as local experiential slice, and S-time as experienced order of change. Third, the public claim boundary is strict: GR is adopted exactly in the active package, but a completed first-principles substrate derivation is not yet claimed. Fourth, the overview, exact-closure note, and five companion manuscripts form the ordered scientific core of the package. Fifth, the present article is a release-facing wrapper built on that core, while downstream derivational materials remain subordinate status and future-work context rather than part of the benchmark claim itself.

1. Introduction

The repository now has a stable public-facing theory package. That fact changes the right mode of presentation. The project no longer needs to be introduced primarily as ontology awaiting its first disciplined theory statement. The exact theory statement already exists in the overview-first exact-closure sequence. What is now needed is a public article that explains that package cleanly, states the claim boundary honestly, and helps readers know where to start.

This article therefore has a narrower role than the companion manuscripts. The *Exact-Closure Sequence Overview* remains the canonical front door to the package itself, and the *Exact-Closure Note* remains the shortest standalone anchor. The present article is instead a public-facing synthesis. It explains what the active package is, what it does and does not claim, how the companion papers fit together, and why the larger derivational archive should be read only afterward.

At observable scale, the package keeps the Einstein–Hilbert law, one operative metric, universal matter coupling, the ordinary ADM / diffeomorphism constraint structure, standard null / proper-time / redshift rules, and no extra preferred-frame, vector, or scalar graviton sector [1, 2]. The congruence-based Æther-flow layer belongs to standard GR observer kinematics [3, 4], not to a second observer-level field sector. For that reason the benchmark package should be classified immediately as not Einstein-aether theory, not Hořava gravity, and not any other low-energy preferred-structure alternative [8, 9, 10, 11, 12, 13, 14]. The remaining derivational ambition belongs instead inside the established emergent, induced, reconstruction, self-coupling, and analogue-gravity conversation [15, 16, 17, 18, 19, 20, 21].

Framework and claim boundary. Æther / Æther-flow framework denotes the broader Æther / Æther-flow framework built on the claims that the Æther is the underlying four-dimensional substrate of reality, the Æther-flow is its intrinsic ordered motion, observed three-dimensional space is the local experiential slice of that deeper substrate, S-time is the experienced order of change arising from matter, light, and the Æther-flow, and observed expansion is the three-dimensional appearance of deeper four-dimensional ordered motion. Within that framework, Æther-flow Interpretation of Relativity denotes the exact-closure theory in which the effective gravitational dynamics are adopted to be exactly Einsteinian with universal matter coupling. In the active sequence, *adoption* means use of that established relativistic dynamics without claiming substrate derivation, while *derivation* is reserved for a first-principles recovery from explicit substrate variables.

The immediate public task is therefore to package, review, and present the exact-closure sequence as the achieved flagship result. Downstream derivational materials remain scientifically relevant, but they belong to the later status layer of the project and should not control the opening presentation of the benchmark package.

What is new here? What survives as novelty in the current package is interpretive and architectural, not a claim of new low-energy dynamics. The package keeps adoption sharply separated from derivation, makes the overview-first benchmark sequence the front door, formalizes the Æther-flow vocabulary through a congruence-based interpretive dictionary, and keeps the positive benchmark result separate from the downstream bounded no-go on the frozen derivational line. None of that introduces a second observer-level gravitational law beyond GR.

What This Package Is Not. For first-time readers, the comparison boundary is deliberately blunt.

- **Not Einstein-aether theory.** The benchmark package does not add a dynamical preferred-frame vector field in the low-energy action; the congruence / Æther-flow layer is a kinematical GR dictionary inside the adopted metric spacetime.
- **Not Hořava or preferred-foliation gravity.** The active package does not claim a preferred slicing, modified low-energy symmetry structure, or an extra low-energy foliation sector.
- **Not a low-energy alternative to GR.** At observable scale the package is ordinary GR with one operative metric and universal matter coupling.
- **Not an already completed emergent-gravity derivation.** The package does not claim that Einsteinian observer dynamics have already been recovered from explicit substrate microphysics or uniquely forced from a substrate action.
- **Not the downstream frozen-line obstruction note.** The current-line no-go is a separate status result on a frozen primitive-reservoir bridge object; it does not define the benchmark package itself.

Positive mirror. The benchmark package is the public result now: an exact-GR theory statement already fixed at observable scale, with the frozen-line no-go kept separate as downstream status and any future derivational restart requiring genuinely new observer-localizing structure.

2. Public Role of This Article

Definition 1 (Flagship public article)**.** *A flagship public article is a release-facing manuscript that introduces the active exact-closure package in one readable document, preserves the fixed claim boundary of the package, and directs readers into the full manuscript sequence without reopening the underlying theory line.*

Proposition 1 (Sequence-preserving role)**.** *The present article is secondary to the exact-closure sequence overview in scientific authority and sequence order, but primary as a public orientation document for readers who need a single coherent entry article.*

This distinction matters. If the public article were allowed to replace the exact-closure overview, the package could drift into a looser or more promotional presentation. If it were omitted entirely, first-time readers would be left to infer the status of the project from a distributed manuscript tree. The correct middle position is to let the package remain the source of truth while the present article functions as its public guide.

3. Ontology in Disciplined Form

The conceptual core of Æther / Æther-flow framework is ontological rather than deformation-first. The active vocabulary is:

- Æther: the underlying four-dimensional substrate of reality;
- Æther-flow: the intrinsic ordered motion of that substrate;
- observed three-dimensional space: the local experiential slice of the deeper substrate;
- S-time: the experienced order of change arising from matter, light, and the Æther-flow;
- observed expansion: the three-dimensional appearance of deeper four-dimensional ordered motion.

These terms are intended to discipline the interpretive proposal, not to overstate the dynamical derivation. The Æther-flow is not introduced as a naive vector wind in ordinary observed space. The observed world is not identified with the whole ontology. The point of the framework is instead that the observer-accessible relativistic world may be interpreted as the experienced appearance of deeper ordered substrate structure.

Remark 1. *At the active public stage, this ontology is real as interpretive structure, but it is not yet advertised as a completed microphysical derivation of the relativistic sector.*

4. Exact Relativistic Theory Statement

Definition 2 (Æther-flow Interpretation of Relativity)**.** *Æther-flow Interpretation of Relativity is the exact-closure, GR-consistent theory of Æther / Æther-flow framework in which the Æther / Æther-flow ontology is retained while the effective gravitational dynamics are exactly those of general relativity with universal matter coupling.*

Its effective action is

$$S_{\text{eff}} = \frac{c^3}{16\pi G}\int d^4x\,\sqrt{-g}\,R + S_{\text{matter}}[g,\psi], \tag{1}$$

with field equations

$$G_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu}, \tag{2}$$

the standard null condition

$$0 = g_{\mu\nu}\,dx^\mu dx^\nu, \tag{3}$$

and the standard proper-time rule

$$d\tau^2 = -\frac{1}{c^2} g_{\mu\nu}\, dx^\mu dx^\nu. \tag{4}$$

Proposition 2 (Operational identity with GR)**.** *For fixed matter sector, initial data, and boundary conditions, the effective observable content of Æther-flow Interpretation of Relativity is exactly that of general relativity.*

This proposition is the center of the exact-closure package. The project does not currently claim a verified low-energy deformation of GR. It claims that the ontology can be retained while the effective gravitational law remains exactly Einsteinian.

The same exact-GR package also accommodates the late-time cosmological benchmark. In the conservative form,

$$S_{\text{eff}}^{(\Lambda)} = \frac{c^3}{16\pi G} \int d^4x\, \sqrt{-g}\, (R - 2\Lambda) + S_{\text{matter}}[g, \psi], \tag{5}$$

or equivalently a vacuum-energy / GR-compatible dark-energy stress tensor coupled to the same metric. This is the ordinary ΛCDM-style completion used for accelerated expansion [5, 6, 7]. What the current line does *not* claim is that dark energy by itself derives GR from the Æther / Æther-flow ontology.

5. Adoption and Explicit Nonclaims

Definition 3 (Adoption)**.** *Adoption is the use of an already established effective dynamics, here GR with universal matter coupling, without claiming that the dynamics have already been derived from deeper substrate variables.*

Definition 4 (Derivation)**.** *Derivation is a first-principles recovery of the effective relativistic sector from explicit substrate variables, together with whatever mode control, uniqueness, and closure arguments are needed to justify that recovery.*

The active public claim of Æther-flow Interpretation of Relativity is adoption with exact closure, not completed derivation. That boundary should be stated positively rather than defensively. It means that the effective theory statement is already disciplined and complete at the operational level, while the deeper foundational recovery problem remains open.

The package therefore establishes the following.

1. The ontological vocabulary is fixed in disciplined form.
2. The exact effective relativistic law is fixed as Einsteinian with universal matter coupling.
3. The late-time cosmological sector may be written conservatively as GR+Λ or, equivalently, with a GR-compatible dark-energy stress tensor inside the same one-metric law.
4. The package carries no separate established low-energy non-GR observable sector.
5. The project distinguishes clearly between interpretation, adoption, and derivation.

The package also does *not* claim the following.

1. It does not claim that GR has already been derived from substrate microphysics.

2. It does not claim that dark energy by itself derives the Einsteinian metric sector from the ontology.

3. It does not claim that ontology by itself settles the microphysical problem.

4. It does not claim that the larger bridge archive has already produced a completed Einstein derivation.

5. It does not claim that the present public package must be read through the bridge archive before it can count as a theory statement.

6. Downstream Derivational Status

The benchmark package is already fixed, so any downstream derivational manuscript must be read against it rather than as a replacement front door. On the current frozen primitive-reservoir line, the bounded obstruction / no-go note records the scoped verdict `Not Derived On Current Line`. That verdict does not weaken the benchmark package already in hand. It states only that the present frozen bridge object does not derive that package on its current assumptions.

The routing consequence is correspondingly narrow and explicit. Another deeper same-output relay below the same frozen bridge object no longer counts as the honest next benchmark-facing move. If derivational work is resumed, it must begin on a genuinely new line with an explicit observer-localizing law or equivalent new structural principle that says how substrate structure maps to observer spacetime fields, how the operative metric is generated locally, and how the Einsteinian observer equation together with relativistic recovery arise from that same local structure.

7. Related Work and Literature Positioning

A public-facing benchmark package should not leave its literature category to guesswork. The clean comparison is therefore explicit.

1. **Standard GR and its congruence / ADM baselines.** Relative to ordinary GR and its classical congruence and Hamiltonian baselines [1, 3, 4, 2], the active benchmark package keeps the same low-energy equations and observable content. The difference is not a second field equation, a new low-energy graviton sector, or a modified matter route. It is the disciplined interpretive overlay supplied by the Æther / Æther-flow ontology and by the congruence-based geometric reading of that ontology. On the same logic, the consistency module is an audit of the adopted GR sector rather than a claim of new low-energy dynamics.

2. **Einstein-aether theory and other preferred-structure alternatives.** Einstein-aether theory and related preferred-structure models introduce a dynamical unit timelike vector, preferred-frame sector, or preferred foliation at observer level and therefore extra low-energy structure or mode content [8, 9, 10, 11, 12, 13, 14]. The active benchmark package does not do that. It claims no surviving observer-level aether vector field, no extra low-energy graviton sector, and no modified Einsteinian observer law.

3. **Emergent, induced, reconstruction, self-coupling, and analogue-gravity baselines.** Programs such as Jacobson's thermodynamic derivation, Sakharov-style induced gravity, canonical reconstruction, self-coupling consistency, Lovelock-type uniqueness analysis, and

analogue-gravity comparison [15, 16, 17, 18, 19, 20, 21] are closer in ambition to the downstream derivation program than to the benchmark package itself. Their category is an attempt to explain why Einsteinian gravity appears, not an exact-GR interpretive package already separated from its open derivation burden.

Proposition 3 (Most accurate current literature label)**.** *At current scope, Æther-flow Interpretation of Relativity is best described as an exact-GR interpretive package plus an open emergent-gravity research program, not as an already completed low-energy preferred-frame alternative to GR.*

In referee terms, this is also the safe publication boundary. The package may be defended as a disciplined exact-GR interpretation and as a bounded research program with an honest no-go record. It should not be defended as a completed derivation of GR from Æther / Æther-flow substrate variables until a substrate-side law actually forces the metric, universal matter coupling, mode control, and Einsteinian closure.

This proposition sharpens the only defensible novelty statement. The project does not earn novelty merely by saying that GR might emerge from deeper structure, because that ambition already belongs to an established emergent-gravity literature. It also does not earn novelty by introducing a new low-energy preferred-frame field theory, because the active benchmark package explicitly refuses that move. If a narrower novelty claim survives review, it lies instead in the combination of disciplined ontology, exact-GR benchmark packaging, benchmark-gated derivation architecture, and willingness to preserve a scoped no-go rather than relabel the failed frozen line as progress.

Remark 2. *Representative comparison points therefore span three clusters: ordinary GR together with its congruence and ADM baselines, preferred-structure alternatives such as Einstein-aether and Hořava gravity, and the open emergent / induced / reconstruction conversation [1, 3, 4, 2, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21].*

8. The Flagship Exact-Closure Package

The active public package should be read in the following fixed order.

Order	Manuscript	Role
1	Exact-Closure Sequence Overview	Canonical front door fixing the package role, reading order, and claim boundary.
2	Exact-Closure Note	Short standalone anchor stating the exact-closure theory in its briefest complete form.
3	Foundations	Ontological vocabulary, framework intent, and the exact-closure relation to GR.
4	Dynamics	Effective action, matter coupling, weak-field structure, and benchmark exact law.
5	Consistency	Gauge structure, degree-of-freedom counting, and effective health conditions.
6	Relativistic Recovery	Exact relation to GR and local relation to SR.
7	Flow Geometry	Congruence-based geometric dictionary for reading Æther-flow inside exact relativistic structure.

Corollary 1 (Public packaging rule)**.** *The overview-first exact-closure sequence is the flagship deliverable of the repository and should be presented before any downstream derivational continuation.*

This order is not arbitrary. It places the finished effective theory statement before the open foundational program. Public accessibility and scientific honesty both improve when that order is held fixed. The present flagship public article is built on that ordered core as a release-facing synthesis. It is not an eighth scientific source that reorders the package, and it does not displace the overview as the canonical front door. The current-line obstruction / no-go note belongs downstream of this package in exactly that sense: it is a bounded verdict on a frozen bridge object, not a replacement front door and not a reason to blur the benchmark package back into open derivational work.

9. Relation to the Downstream Derivational Bridge Archive

The repository also contains a large derivational bridge archive. That archive remains important. It documents genuine attempts to recover or constrain the deeper substrate route, records negative and partial results, and preserves the history of the broader research program. Yet its role in public presentation is now different from what it would have been at an earlier stage.

The bridge archive is no longer the condition for saying that the repository has a theory statement. The theory statement is already given by Æther-flow Interpretation of Relativity as the exact-closure package. The archive is therefore downstream and optional. It should be read as foundational continuation answerable to the exact-closure benchmark, not as the front door to the project.

Remark 3. *If a future bridge route succeeds, it must recover the same exact relativistic benchmark already fixed by the flagship package. If a future bridge route fails, the project contracts back to the exact-closure theory rather than back to ontology alone.*

10. Research Provenance and Collaboration Method

The repository should also be read honestly as AI-assisted theoretical research under sustained human direction. The original conceptual direction came from the user. GPT-5.4 assisted with drafting, mathematical exploration, branch screening, organization, and revision. The resulting package is therefore neither a purely conventional solo draft nor an autonomous AI production.

This provenance matters for transparency, but it does not change the intellectual standard to which the work should be held. The manuscripts should be judged by their assumptions, equations, internal logic, and honesty about what remains open. AI assistance does not convert speculative steps into established physics, and it does not remove the need for expert human review. Its role here has been methodological support within an explicitly documented collaboration.

11. How the Package Should Be Reviewed

At public-release stage, the most useful technical review focuses on five questions.

1. Is the claim boundary stable and explicit throughout the package?
2. Do the equations and prose say exactly what is established, and no more?

3. Are the package roles of overview, anchor, and companion manuscripts clear and non-overlapping?

4. Does the presentation distinguish properly between the flagship exact-closure package and the downstream bridge archive?

5. Does the presentation make equally clear that the current bounded primitive-reservoir result is a scoped no-go on a frozen bridge object, so any resumed derivational work would require a genuinely new observer-localizing law rather than another same-output relay?

Readers who need the shortest technically disciplined path should begin with the overview and then the exact-closure note. Readers who want the modular full statement should continue through foundations, dynamics, consistency, relativistic recovery, and flow geometry in that order. Only after that should the bridge archive be used for broader foundational context. Public presentation should keep that overview-first order explicit and easy to audit, with the present manuscript read as a single-entry synthesis of the already fixed benchmark package rather than as a reordering of its scientific core.

12. Conclusion

The repository now has a public-facing flagship theory package. The positive result is that Æther-flow Interpretation of Relativity can already be presented as a disciplined exact relativistic theory statement built on the Æther / Æther-flow ontology, with the effective gravitational dynamics adopted exactly as those of GR. Within that same benchmark package, late-time accelerated expansion is handled conservatively by the ordinary cosmological constant or an equivalent GR-compatible dark-energy sector. The scope of that result is the overview-first exact-closure package and its companion manuscripts, not a completed first-principles substrate derivation.

That boundary is exactly what gives the manuscript its public value. It provides one coherent entry point into the benchmark package, makes the claim boundary readable without altering it, and shows that the exact-closure result already stands as a finished article-scale theory statement. The conclusion is therefore not that derivation has been completed, but that the benchmark package is now clear enough to be read on its own terms.

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