THE FOUNDATION OF THE UNIVERSE

part II (English)

- technological progress -

geometrodynamic transport, a universal optimization architecture

**** universal sequence: contraction → adaptation and stabilization → expansion ****

1. The vortex tube and the constituent vortex lines (smaller vortex tubes)

1.1 Singularity, the primary element of study

At the geometrodynamic level, any coherent vortex tube (same line) functions as an open and self-organizing transport system, articulated through the universal sequence IN–transport–OUT. This natural architecture, in Unified Theory, takes on a profound character, as it relies on geometric memory and the conservation of the parameter α, allowing the system to remain coherent or reconfigure itself when the geometric stress exceeds the adaptive capacity.

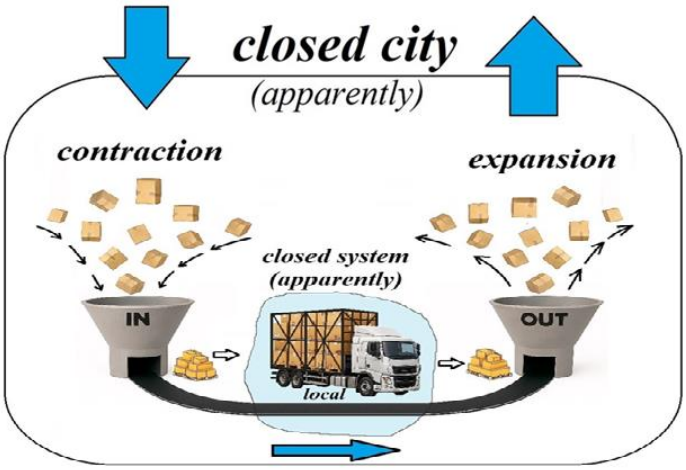
In Unified Theory, any helical flow, regardless of topology (C-A, C-C, M-C, T-C), functions as an **open and self-organized transport system**, characterized by three distinct functional regions:

a. **IN** *(contraction, loading, accumulation, preparation)*

b. **Transport Zone** *(geometric self-organization, efficient packaging)*

c. **OUT** *(expansion, download, redistribution, dissemination)*

This triptych defines the fundamental architecture of any coherent open vortex.



singularity, genesis, mother

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a. IN → Preparing material/information for transport (contraction)
The IN area performs:

- collecting geometrodynamic mass (**Mgd**) from emerging networks,
- compaction and convergence of vortex lines,
- the branches gather into a trunk
- reducing the radius and increasing the tangential velocity, in agreement with the conservation of Cf,
- the geometric organization necessary to initiate coherent transport.

Necessary condition: establishing an internal configuration compatible with preserving fundamental constants.

The area is characterized by geometric contraction, acting as a natural loading interface. Here, dispersed flows, originating from the emerging lateral networks, are synchronized and summed into a single coherent

axial flow. This phase generates a forced alignment of helical micro-flows, becoming the natural analogue of the engineering process of **loading and mass consolidation** . This phase is equivalent to the loading of a vehicle or train, the cargo is compacted, ordered, and prepared for stable movement.

b. **Transportation Area** → Maximum geometric efficiency regime
Between IN and OUT is the central region of the vortex, the place where:
- the helical geometry stabilizes,
- the fundamental constants *Cc , Cf, Ce* are simultaneously conserved,
- the coupling constant α becomes the central kinematic invariant,
- the flow takes on an optimal geometric, packing shape, which allows efficient transport over long distances.

This is where the essence of the law of geometric adaptation comes into play:
To maintain coherence and minimize geometric stress, the flow continuously adjusts its internal parameters so as to conserve Cc , Cf, Ce.

This adjustment is the basic dynamics of the helical flow system:
- **if geometric adaptation is possible → coherent flow, efficient transport;**
- **if geometric adaptation becomes impossible → decoherence and reconfiguration (new state).**

The transport zone is, therefore, **the self-organized efficiency regime** in which:
- the helical trajectory is stable,
- dissipation is minimal,
- the geometric energy is distributed uniformly,
- geometric memory is preserved (α conservation).
- possible generation of new vortices (secondary, through C-C, M-C or T-C)

It is the "trunk" of the vortex, the part for which nature self-optimizes your entire system.
The geometry between IN and OUT is efficient by definition because:
1. perfectly maintains fundamental constancies → kinematic coherence
2. minimizes geometric stress → structural stability
3. optimizes transport → undisturbed flow, reduced dissipation
4. continuous geometric self-adaptation → real-time dynamic adaptation, geometrodynamics
5. the flow constants function as geometric memory → the helical pattern remains invariable

The transport core , located between IN and OUT, represents the optimal transit region. Here the flow geometry continuously adapts to strictly preserve the Preda constants, reducing geometric stress and avoiding decoherence . This intermediate zone acts as a real-time physical optimization algorithm: it modifies the pitch, curvatures and radius so as to maintain $\Delta C_c = \Delta C_f = \Delta C_e = 0$.

Through this architecture, nature transforms helical flows into self-organized, efficient transport vehicles, capable of preserving and transferring geometric information (memory) over time.

In engineering, this is the cruising speed regime, optimal consumption over long distances, maximum structural stability, minimization of vibrations and noise, energy efficiency. The middle zone of the vortex is analogous to the highway optimized for transportation over very long roads.

This result is profound, with transport not just functional, but **integrated into the very geometric identity of the system** .

c. **OUT** → Redistribution , expansion and formation of new structures
The OUT zone performs:
- the transported mass is redistributed,
- the flow visibly branches, diverging vortex lines
- "parcels" are delivered in local networks,
- dispersion and branching of the flow occurs,
- adapting to new transport networks,

It is the *delivery* phase in which the transported information is distributed in the medium, leading to emergence, bifurcation. This area, defined by geometric expansion, functions as an unloading interface. Here the axial flow redistributes into new branches, networks or even new helical transport structures. This process makes possible **the emergence of secondary flows** , depending on the coupling compatibility. OUT thus becomes the natural analogue of **unloading and distribution points** in technical transport systems.

1.2 The fundamental system of the Unified Theory

The result of the theoretical, descriptive synthesis is expressed through the fundamental system:

$$\begin{cases} \textbf{(I)} & \alpha = \dfrac{C_f C_e}{C_c^2}, \\ \textbf{(II)} & \Psi(x,t) = \int (K_{CA} + K_{CM} + K_{CC} + K_{TC})\, \Psi(x',t')\, dx'\, dt'. \end{cases}$$

(I) The kinematic equation of state of helical flow defining the coupling constant
(II) geometrodynamic interaction equation between two adjacent helical flows

The first equation defines **the internal identity** of each tornado, and the second describes **the universal mechanism of interaction and transformation** of the ensemble. Together, they constitute **the mathematical and conceptual core** of ***the Unified Theory*** , a framework in which **kinematics and geometry** become reciprocal expressions of the same dynamic reality.

All four kernels act within **the same kinematic framework** , each representing a **particular form of the interaction between two adjacent helical flows** .

- ✓ ***C–A*** *initiates the system.*
- ✓ ***M–C*** *extends it axially.*
- ✓ ***C–C*** *multiplies it laterally.*
- ✓ ***T–C*** *balances it transversely.*

The equation of state and the kernel equation form a closed system of geometrodynamic self-organization , in which the fundamental constants remain conserved. Each kernel can function as a genesis, induction or interaction operator, without requiring additional extensions. The interactions of helical flows, grouped behind the name " FUNDAMENTAL CODE" together with the Inductive Principles between them, represent the central part of the Unified Theory

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In Unified Theory, the triad **IN → Transport → OUT** is *mathematically identical* to the architecture of any efficient transportation system in engineering: **loading → optimal transport → unloading** .

Coherent helical flows are not just fluidic structures, but **universal transport architectures** , organized by an intrinsic **contraction-optimal transport-expansion sequence** . This sequence is stabilized by the conservation of fundamental constants.(C_c, C_f, C_e) and the invariance of the coupling constant , which functions as a α**geometric memory** mechanism that preserves the kinematic identity of the system during the transport process. The entire ensemble, formed by the three regions, highlights a universal geometrodynamic principle : coherent helical flows are self-organized transport systems, structurally optimized by the need to maintain coherence and preserve their internal memory .

When the geometric stress exceeds the adaptive capacity, the flow enters a **decoherence regime** , and the system undergoes a **structural reconfiguration** , establishing a new set of fundamental constants.
Thus, the transport mechanism is not only optimizing, but also evolutionary: only configurations capable of supporting coherence and geometric memory are maintained, the others being eliminated or transformed.

Geometrodynamic transport becomes, in this sense, a physical manifestation of a geometric Darwinism, in which natural selection is exercised by the invariance of fundamental constants, and adaptation is achieved through continuous geometric remodeling. The system is not just a transport channel, but an evolutionary architecture, capable of optimizing, memorizing, and transforming itself .
From now on, the universal principle behind the self-assembly of matter could be called, without mistake, archaically, " God"!

2. Geometrodynamic Darwinism in the Unified Theory

2.1 Introduction

The Unified Theory proposes a fundamental kinematic framework in which helical flows, dynamic entities defined by three invariant constants (Cc, Cf, Ce) and the coupling constant α, self-organize, replicate, evolve, and restructure under the pressure of coupling interactions and geometric stress. In this framework, the dynamics of helical flows manifest a **Darwinian-like evolutionary structure**, in which geometric memory (fundamental constants), replication (the C-C kernel), selection by coherence/decoherence, and geometric reconfiguration play fundamental roles in the mechanisms of biological evolution.

2.2 Geometric memory and the role of fundamental constants

The Preda constants (Cc, Cf, Ce) represent **the fundamental information** that defines the kinematic identity of a helical flow. They are conserved in time as long as the system remains coherent, thus constituting a **memory vector** in the strictest sense of the term.

- **Cc** describes the continuity of the flow (flow–transfer).
- **Cf** models the kinematic shape (chirality , rotation, radius–velocity relationship).
- **What** encodes helical cyclicity (rhythm, frequency, volumetrics).

Together, they constitute a **"geometric genome"** , an informational structure that, integrated into RNA or DNA, is transmitted in its entirety in replication processes.

2.3 Coupling kernels and the Darwinian nature of interactions

The interactions between helical flows are described by four fundamental kernels :

1. **C-A (axial genesis)** – spontaneous emergence of a flow from initial fluctuations.
2. **M-C (end-to-end coupling/axial chain)** – axial extension by fermionic concatenation.
3. **C-C (cylinder-cylinder coupling)** – replication and emergence by assembly into a bosonic bundle, with dual evolutionary function.
4. **T-C (toroidal induction)** – intermediate reorganizations in toroidal, knotty, cyclic configurations.

Of these, the kernel **C-C** introduces the essential evolutionary property: **faithful replication of information**.

2.3.1 Geometric replication, mechanical induction of rotation

A mature flow can induce a response that:

- keeps **the same fundamental constants** , implicitly the coupling constant
- faithfully reproduces helical geometry,
- the same transport processes continue alongside,
- branches during loading and unloading,
- maintains the same kinematic memory.

This replication is analogous to cell division or DNA duplication: **the informational structure of the flow is transmitted almost entirely** .

Bunching, through collective emergence (volumetric growth), is the fundamental process of life. Without this interaction, the growth of any entity is not possible!

The kernel also allows joining multiple compatible flows into a common structure:

- gathers flows with the same coupling constant *(species) into axial bundles*
- has ramifications for loading (roots) and unloading (branches),
- emerging aggregates.

It is the analogue of multicellularity, of tissue formation (growth) or of biological colonies (multiplication).

2.3.2 Coherence, geometric stress and natural selection

In helical dynamics:

- coherence represents configuration stability, memory preservation, and transport continuity;
- Geometric stress occurs when the kinematic environment forces an incompatibility with the values of the fundamental constants.

When the stress exceeds the geometric adaptation capacity, decoherence occurs . This is a process in which the helical flow system loses the internal geometry compatible with its constants. This phenomenon is the biological equivalent of the "death" of a structure.

Decoherence leads to:

- self-destruction of the current configuration,
- reconfiguring into a new flow,
- the adoption of new fundamental constants,
- the emergence of a new state α.

This is the equivalent of an evolutionary leap, analogous to a genetic mutation that generates a new species.

2.3.3 Darwinism of helical geometrodynamics through interaction kernels

Within the Unified Theory, the kinematic equation of state of any helical flow is

$$\boldsymbol{\alpha = \frac{C_f C_e}{C_c^2}}$$

and the interaction kernels (C–A, C–C, M–C and T–C) define a deep evolutionary paradigm, in which each helical flow behaves as a system capable of maintaining its kinematic identity only through continuous geometric adaptation. **The conservation of fundamental constants** is a central element of this paradigm: they function as an **internal kinematic memory, an invariant information that is included in any helical flow, independently of spatial transformations, environmental changes or configurational modifications induced by the kernels .**

This memory is not passive, but conditions the dynamics: any vortex is forced to submit to a geometrodynamic pressure of adaptation, **adjusting its internal geometry** so as to preserve its own set of fundamental constants, ensuring **continuous kinematic coherence.** When this adaptation becomes impossible, the system cannot **maintain coherence** and passes into a state of **decoherence. geometrodynamics** , phenomenon interpreted as "system exit": an irreversible geometric transformation, in which the vortex tube loses its previous kinematic identity and adopts a new set of fundamental constants.

The kernels play a key role in this process. They modulate the adaptive pressure through four distinct modes—axial genesis (C–A), replication/parallelization (C–C), head-to-head concatenation (M–C), and toroidal induction (T–C)—each of which produces specific geometric deformations that test the resilience of internal memory. Only those helical structures capable of coherently mapping their geometry onto the eigenvalues of the fundamental constants survive these evolutionary interaction processes; the others enter decoherence and are excluded from the chain of kinematic evolution. They reconnect to other circuits, through reconfiguration, through total reconstruction.

Thus, the global dynamics of the system can be interpreted as a quantum Darwinism of the geometrodynamic- helical type: selection does not operate on mass or energy, but on kinematic coherence and the self-preservation capacity of internal memory.

Geometric adaptability becomes the fundamental criterion for survival, and geometric decoherence marks the failure of the system to sustain this identity. In this interpretation, the evolution of helical structures is not just a physical process, but an emergent mechanism of self-organization and selection of coherent forms, driven by a geometrodynamic adaptation law and the action of coupling kernels .

2.4 Evolutionary succession: from genesis to diversification

Helical flows evolve through a geometrically determined cycle:

- **Genesis (C-A)** – spontaneous, unstable, transient occurrence.
- **Axial stabilization (M-C)** – extension and continuity.
- **Replication or growth (C-C)** – multiplication and faithful transmission of memory or growth
- **Toroidal emergence (T-C) – transient, cyclic, knotty,** adaptive induction reorganization.
- **Coherence/ decoherence selection** – maintaining compatible ones, eliminating unstable ones.
- **Evolutionary reconfiguration** – emergence of new helical flow geometries, other parameters

This cycle, fundamentally, is isomorphic with the mechanisms of biological evolution.

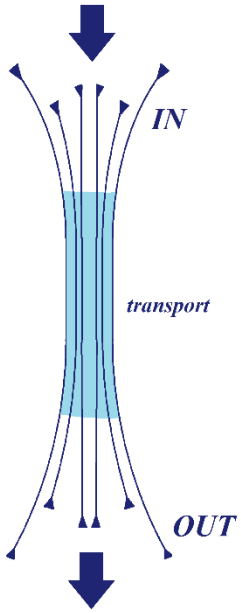
2.5 Helical geometrodynamics in the fundamental mechanisms of life

Due to its properties, the open helical geometrodynamic system inserts fundamental links with biology, with the entire living world:

- **Memory** → fundamental constants = genome.
- **Diversity** → values of fundamental constants = genome.
- **Replication** → inductive CC kernel = cell division.
- **Variation** → geometric stress = mutation.
- **Natural selection** → coherence/ decoherence .
- **Adaptation** → continuous geometric adjustment.
- **Evolution** → jumps in α, state transformations.
- **Collective organization** → bosonic bundles = multicellularity .
- **Kinematic colonization** → M-C chains = filamentous organisms.

Thus, Helical Geometrodynamics not only includes open evolutionary mechanisms, but is built on a universal evolutionary principle, independent of biochemistry. Now we have the answer to the question

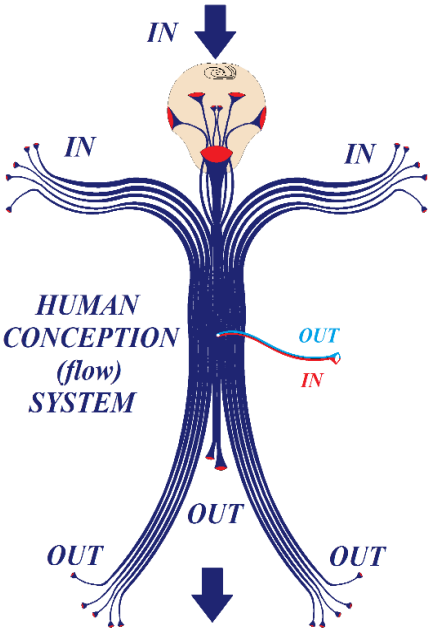
" Who is God? "



2.7 Implications for the origin of life and universal models of evolution

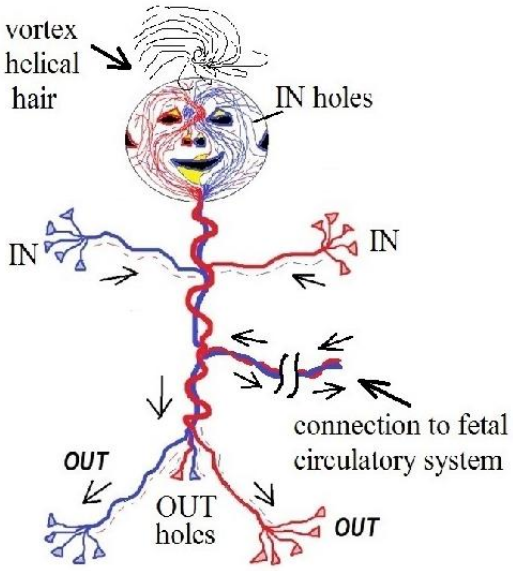
If the helical structures of DNA and RNA are molecular manifestations of fundamental geometrodynamic flows, then:

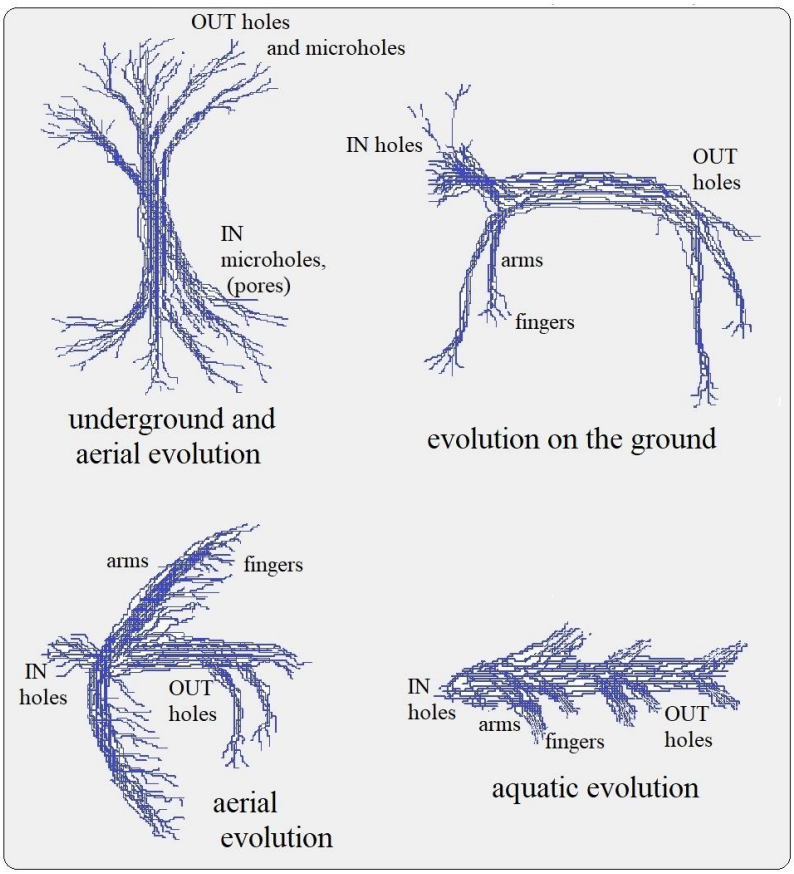
- biological evolution is an **expression** of a universal dynamic;
- genetic memory reflects a pre-existing kinematic mechanism;
- life is a **geometrodynamic specialization** and not an exception.
- the systems are open



This gives rise to the notion of helical **geometrodynamic Darwinism ,** a fundamental evolutionary archetype, of which biology is just a particular instance.

2.8. Evolution of species, by leapfrogging (reconfiguration through biofeedback) and natural selection





The kernel **C-C** transforms the fundamental system into an open and complete evolutionary system: with memory, replication, variation, selection, adaptation, and emergence.

All the essential mechanisms of natural evolution reappear, purely kinematically, in helical dynamics. In this perspective, the Unified Theory shows not just a physics of flows, but a general theory of evolution, applicable from micro-tornados and cosmic macro-tornados to biological structures grounded in geometrodynamics **.**

This bunching together shows why any dynamic action on one branch propagates to all the other branches. The essential condition is ; it must come from the same trunk!

As we see in other chapters of the Unified Theory, quantum connections at a distance, of particles coming from the same source, are now very easily explained !

3 Helical kinematic entanglement in open flow systems through tubes and vortex lines

3.1 Introduction

We will introduce a new concept based on the phenomenon of structural coupling that occurs in multifilament vortex tubes, whose vortex threads share the same global geometric axis. It is shown that transverse perturbations propagate instantaneously between the threads, while each thread interdependently adjusts its axial geometry. The result is a coherent reconfiguration of the entire assembly. The model provides a deterministic framework for correlating dynamics in helical flow-based transport systems.

Vortex tubes, formed by multiple helical threads, exhibit collective behaviors that cannot be explained exclusively by local interactions of superfluid flows . Each vortex thread has its own IN/OUT kinematic path, but all threads are constrained by the same global geometric axis. This common infrastructure generates a

kinematic interdependence at the level of the entire structure, called in this context ***helical kinematic entanglement*** **.**

Only at the emergent or replication interaction (C–C), the two flows become:

- ***axially indistinct,***
- ***geometrically coherent,***
- ***kinematically synchronized.***

Entanglement property : two or more flows share the same state through multiple correlated states.

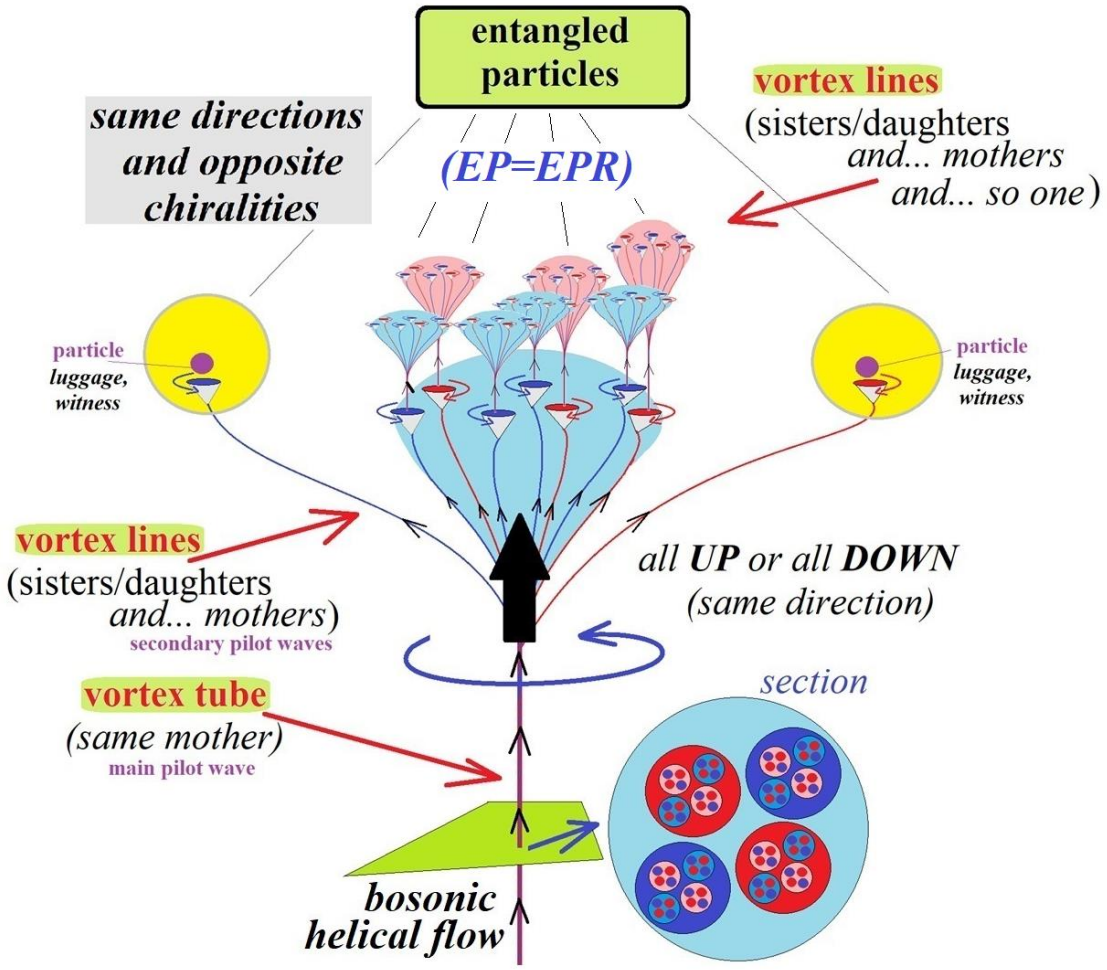
3.2 The structural foundation of long-distance connections (entanglement , correlation)

A vortex tube is composed of a multitude of helical filaments having the same coupling constant

$$\alpha_i = \alpha$$

but characterized by possibly different fundamental constants (Ci_c, Ci_f, Ci_e). *This coupling constant is equivalent to the modulus (Z) of spur gears. These gears have different numbers of teeth but the same modulus.*

Although the filaments may be spatially separated or belong to different branches, their internal axes are collinear with the global axis of the tube. This alignment imposes an axial coherence condition: any geometric change in a filament must be compensated by the rest of the filaments to maintain the global kinematic identity of the tube.



In the coherence regime (αconstant), bosonic flows form bundles that achieve the equivalence between correlation and geometric connection, validating the equality **EP=EPR** .

In 2013, physicists ***Juan Maldacena*** and ***Leonard Susskind*** suggest a fundamental connection between two seemingly disparate concepts: quantum mechanics and general relativity. They propose **the ER=EPR conjecture** , a new theoretical idea in modern physics.

Here is what the terms and meaning of equality mean, in brief:

ER (***Einstein-Rosen*** bridges): Refers to Einstein-Rosen bridges, popularly known as wormholes from Einstein's theory of general relativity. These are hypothetical tunnels that connect two distant regions of space-time.

EPR (***Einstein- Podolsky -Rosen*** paradox): Refers to quantum entanglement (quantum inseparability), a phenomenon by which two particles remain connected, such that the state of one instantly influences the other, regardless of the distance between them.

The meaning of **ER=EPR: The conjecture states that two** entangled particles (EPR) are actually connected by a tiny wormhole (ER).

In physics, it is an attempt to unite quantum mechanics (inseperation) with gravity (curved space-time), the two great theories that are currently incompatible.

Quantum geometrization: Suggests that quantum inseparability is not just a strange property of particles, but has a geometric basis in the structure of space-time (*current concept*).

Information and space: Implies that the geometry of space is woven by the quantum entanglement between pieces of space (correlation).

In short, **ER=EPR** proposes that wormholes are the geometric manifestation of quantum inseparability.

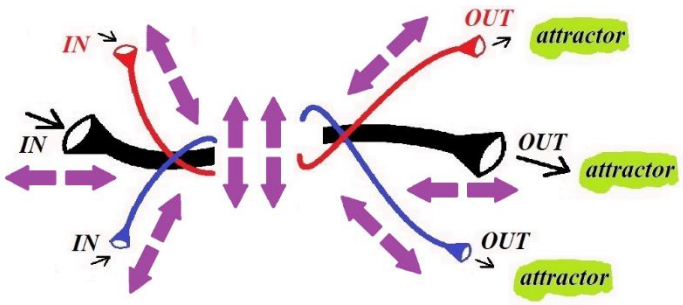
The Unified Theory confirms this equality. Moreover, in the context of the new space-time-cycle concept, the fundamental mechanistic principles behind interactions at a distance are identified.

3.3 Two-way propagation mechanism

The helical entanglement results from the combination of two complementary processes:

A. Transverse (horizontal) coupling

Local perturbations are transmitted laterally, between the filament axes, by induction or cross-coupling and within the bundle. This process distributes kinematic information between neighboring filaments.



B. Geometric adaptation Axial (vertical)

Each filament independently adjusts its axial geometry along the IN–OUT transport line, to conform to the coherence imposed by the common axis. Surely the adaptation is controlled by a geometrodynamic transformation law (we are only interested in the principle).

The two directions of transmission of mechanical movements, of geometric transformations, act simultaneously, generating a deterministic and synchronized reaction of the entire tube.

3.4 Definition of helical kinematic entanglement

Helical kinematic entanglement is defined as the global interdependence between the filaments of a vortex tube, characterized by:

- transverse transmission of disturbances,
- axial transmission of the disturbance through the individual axial adaptation of each filament,

- maintaining a common global geometric axis, which leads to a coherent reconfiguration of the entire structure regardless of the position or branch of the initially disturbed filament.
- systemic opening, through IN/OUT zones

3.5 Quantum Darwinism – kinematic helical entanglement

The helical kinematic entanglement represents a fundamental mechanism of geometric coupling in the internal structures of multifilament vortices. It is the Darwinian mechanism! By combining transverse perturbation transfer with individual axial adaptation, the theory provides a predictive framework for the coherent dynamics of vortex tubes (built of vortex lines) and for the application of geometrodynamic principles in the modeling of complex flows.

At a general level, we are talking about a principle of geometrodynamic transformations, of adapting flow geometries.

We could define a law of geometrodynamic transformation that unifies all these processes under a single statement:

"Any helical flow continuously adapts its internal geometry to conserve fundamental constants; and when this adaptation becomes impossible, the system undergoes a spontaneous geometric transformation, passing into a new kinematic state, characterized by other eigenconstants."

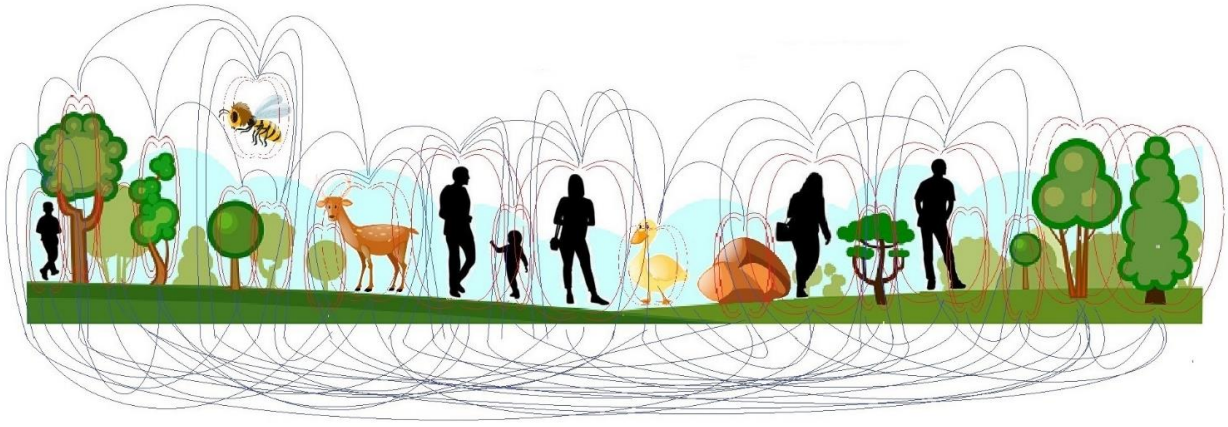
This law defines the universal mechanism of self-organization and regeneration: geometry is the language through which dynamics maintains its coherence, and geometric metamorphosis is the signature of the kinematic change of state.

Everything behind the mechanism of self-adaptation, self-reconfiguration, self-organization of transport, at any dimensional level, we could find behind the word... Darwinism!

Systems being open, this internal self-recalibration of geometries but also of flow parameters, hides the fundamental principles of the Universe, at any scale!

3.6 Consequences at the level of the global transport system

The presence of helical kinematic entanglement ensures that any local perturbation — regardless of the thread, branch, or IN/OUT path — produces a global geometric adjustment. This deterministic mechanism gives the tube structural stability, rapid adaptation capacity, and coherent propagation of kinematic information.

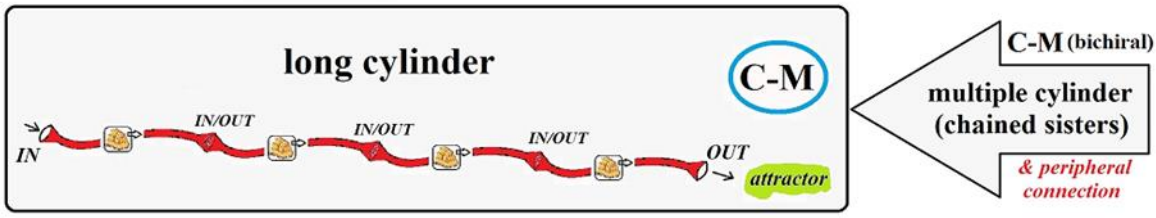


The statement that "everything is interconnected" now has a strong argument, the fact that all life comes from the same trunk, mother Earth. But mother Earth is a daughter of... the solar system, a son of... the Universe!

Observation:

Not to be confused with the action at a distance, given by superspeed tornadoes, which have fermionic, end-to-end concatenation characteristics!

superspeed highways (axialization) are 2 synchronous processes essential for connections between bunches, between bundles of any size.



4 The invisible energy of tractors ("dark "), geometrodynamic engine of invisible ("dark") matter

4.1 Only matter, through mass, possesses energy, a descriptive principle of its action

(locomotive energy, wave energy, light energy)

In this chapter I present a geometrodynamic interpretation of dark matter and dark energy, using the conceptual framework of the Unified Theory. It is shown that dark matter can be described as ensembles of helical flows with almost zero flow variation (Cc → 0), which become undetectable, but remain active through the captive witnesses, through the geometrodynamic mass (Mgd). In this limiting regime, the vortex tubes exhibit extremely small radii and extremely high axial velocities, generating spatial curvature detectable only through the effects on the witnesses.

This process of elongation, simultaneously with thinning, of the vortex tubes ***, we have called axialization .***

I also propose that dark energy corresponds to the global variation of geometrodynamic time (Tgd), which controls the reorganization of space and induces the emergence of these invisible structures. Overall, a unified model emerges in which dark energy fuels the formation of dark matter through geometrodynamic mechanisms, without introducing exotic particles.

Cosmological observations indicate the existence of two dominant components of the Universe: dark matter (approx. 27%) and dark energy (approx. 68%). Neither has been directly detected, and standard descriptions assume hypothetical entities without clear structure.

The Unified Theory, based on helical flows, characterized by the fundamental constants (Cc , Cf, Ce) and the coupling constant α, offers an alternative framework in which:

- **dark matter** consists of ultra-thin, centrally hollow, massive vortex tubes (**Mgd) with** Cc → 0;
- **Dark energy** represents the totality of the principles behind the tractors that produce the global variation of geometrodynamic time (**Tgd**) and controls the geometric evolution/adaptation of space.

Mgd is the mass in transit between two sections of the flow (IN, OUT). This is not a classical mass, but a property of the flow and its distribution of geometries . **Tgd** measures the temporal variation of geometries and how space itself reorganizes, more slowly or more rapidly. Helical flows adapt their geometry to preserve fundamental constants; if this is no longer possible, state transformations occur.

Dark matter is the flow towards attractors, in the limit Cc → 0 and implies:

$$r \to 0, \quad v_t \to \infty,$$

to preserve Cf and Ce.

Thus, the vortex tube becomes very thin, very fast, undetectable, but with real effect.

When the flow becomes purely geometric (radius → 0), the generated spatial curvatures do not require baryonic matter. This corresponds exactly to the behavior of dark matter observed in galactic rotation curves, gravitational lensing effects, cosmic filamentary structures.

Thus, space self-organizes in a manner that produces geometric tension and the emergence of new helical flows. The emergence of **cosmic filamentary structures** , as evidence of helical tube chains, is natural, these predictions being compatible with current observations without introducing exotic particles.

Dark matter, although it is a substance, many physicists associate it more with a **kinematic limit state** of (undetectable) helical flows.

Dark energy (undetectable) is the attractor field that produces **a global process of geometric adaptation** , through undetectable (dark) matter. Both represent different aspects of the same process of geometrodynamic self-organization .

This perspective offers a coherent, predictive and unified interpretation of the "dark" phenomena in the Universe. If a locomotive has energy then dark matter also has dark energy! This darkness, being undetectable, we only observe the effects of the impact, the interaction with detectable matter! Current science, knowing nothing at a fundamental level, only studies effects and laws between effects!

4.2 Unification of MC and RG through Helical Geometrodynamics

Singularities and local cosmic expansions, infinities in invisible filamentary transport

One of the fundamental problems of contemporary physics is the structural incompatibility between quantum mechanics (CM) and general relativity (GR). CM is based on fields defined on a fixed space-time, while GR describes gravity as a deformation of space-time itself. Within current physics, divergences (infinities) in CM and singularities in GR highlight a lack of conceptual unification.

In the Unified Theory, quantum mechanics and general relativity appear as **particular limits** of a fundamental structure: **coherent helical flow** , characterized geometrically by the three invariant constants (Cc , Cf, Ce), by the equation of state, the coupling constant α. The infinities in the MC, the singularities in the RG and the accelerated expansion of the Universe are the consequences of **the kinematic regimes of the vortex tubes,** structured in the three zones: IN, transport filament and OUT. Dark matter is a kinematic regime where Cc → 0 (undetectable but coherent flow). The Schrödinger equation represents, in fact, a particular limiting case of the kinematic equation of a helical filament, and the gravitational geodesics appear as solutions to minimize the helical coupling α. Hence, the mathematical concept of the unification of the MC with the RG, under the formalism of helical geometrodynamics, is obvious.

The Unified Theory starts from a single kinematic principle: any physical entity is a **geometrodynamic helical flow** , structured in a vortex tube with three zones:

- **IN** – contraction (loading) mode
- **Filament** – coherent transport regime
- **OUT** – expansion mode (discharge)

These flows, singular or compound, are described by the three invariable constants:

$$C_c = \frac{dQ}{dt}, C_f = rv_t^2, C_e = r^3 f^2,$$

and through a simplified equation of state of a tornado, through the kinematic coupling constant:

$$\alpha = \frac{C_f C_e}{C_c^2}.$$

This general formalism allows the derivation of quantum and gravitational phenomena as **particular limits of a fundamental helical kinematics** .

In theoretical physics (especially quantum field theory), **divergences** are "infinite" results that appear in calculations and usually indicate that the mathematical model needs an adjustment to describe reality. They are

of two types, named after the regions of the electromagnetic spectrum where wavelengths are very short (UV) or very long (IR):

- UV (Ultraviolet) Divergences – The small scale problem - Occurs when we calculate interactions at infinitesimal distances or extremely high energies. Cause: In mathematical models, particles are often treated as dimensionless "points". When you try to calculate the energy of such a point, the equations tend to infinity because the distance is zero. Solution: A process called renormalization is used . Physicists introduce a "cutoff" and redefine the parameters of the theory (such as mass or charge) to absorb these infinities, yielding finite results that can be measured experimentally.
- IR (Infrared) divergences – The large scale problem – arise in theories involving massless particles (such as photons or gluons) at very low energies or very large distances. Cause: When a charged particle (such as an electron) moves, it can emit an infinite number of photons with energy close to zero ("soft" photons). Calculations for the probability of these processes tend to infinity. Solution: It is shown that these infinities cancel each other out when you consider everything that a real measuring device can detect. Since no detector is perfect, it cannot distinguish between a single electron and an electron accompanied by a "cloud" of extremely weak photons.

Infinities, in MC, have an equivalent in the IN regime of Unified Theory, through axialization .

UV and IR divergences, through typical integrals in MC:

$$\int \frac{d^4k}{k^2+m^2} \to \infty(k \to \infty),$$

represents excitations of radius → 0, energy → ∞.

The Unified Theory identifies this regime exactly with the end of zone IN – where *axialization begins* :

$$r \to 0, v_t \to \infty, C_c \to 0.$$

Basically, UV divergences are vortex tubes with minimal Cc , thus the kinematic analogue of the tornado center.

Similarly, singularities, in RG, have an equivalent in the final regime of IN in Unified Theory, through the beginning of axialization .

Schwarzschild / Kerr metrics :

$$R_{\mu\nu\lambda\sigma}R^{\mu\nu\lambda\sigma} \to \infty(r \to 0),$$

a physical singularity appears.

The Unified Theory shows that the singularity of current theories is NOT a point, but a kinematic regime with forced geometry, which forces decoherence , where geometric adaptation becomes impossible.

In Unified Theory, a singularity is considered the mother tornado, the first fundamental transfer helix , the EFT referred to, the fundamental landmark!

geometrodynamic transformation law would sound something like this:

Any helical flow continuously adapts its geometry to preserve Cc , Cf , Ce ; when adaptability becomes impossible, a state metamorphosis occurs. Thus, singularities become kinematic -geometric transitions, between different states, not "infinite points". Moreover, the axialization process occurs before decoherence, decouplin. The time period between 2 coherent, stable and successive states, we can call the singularity lifetime

Current theories no longer know what happens beyond the singularity point. Basically, in Unified Theory, it is the end of a singular life, a terminal point, of disintegration of an EFT. Obviously, this point is a new beginning of another entity, by reconnecting to other transport circuits, with other parameters.

The filamentary regime, in Unified Theory, has an equivalent in Quantum Mechanics. Thus, the Schrödinger equation is, in fact, a kinematic limit.

For a filament with constant Cc , the axial geometry satisfies:

$$\frac{\partial^2\psi}{\partial s^2} + \kappa(s)\psi = 0,$$

where ψ is the transverse deflection, and κ(s) is the filament curvature.

Identifying:

$$\kappa(s) \sim \frac{2m}{\hbar^2}(E - V),$$

we obtain exactly the stationary form of the Schrödinger equation:

$$-\frac{\hbar^2}{2m}\frac{d^2\psi}{ds^2} + V(s)\psi = E\psi.$$

Major result : The Schrödinger equation is not fundamental, but a particular case of constant-flux helical (filament) kinematics.

The nonlocality is easily explained. Perturbations between filaments are transmitted transversely (helical kinematic entanglement), generating instantaneous correlations within the same axial bundle.

Also , the OUT regime also explains the accelerated expansion of an observable part of the Universe!

OUT is the regime in which:

$$r \to \infty, v_r \to \infty,$$

and an expansion gradient appears.

If we denote H as the rate of change of the radius in OUT:

$$H = \frac{1}{r}\frac{dr}{dt},$$

this is formally identical *to the Hubble constant :*

$$v = Hr.$$

Interpretation of the Unified Theory;

Hubble constant is the macroscopic signature of the cosmic OUT flux, so dark energy is a kinematic effect, not a substance.

Tornadoes with extremely small radius, extremely high axial velocity, with almost zero flux, become undetectable but exert gravity or supergravity through the filament. Thus, dark matter = vortex tubes in the IN-axialization regime , with filament having the flow parameter Cc almost zero (flux **Cc → 0**).

We already know that gravity is a monochiral (fermionic) flow while supergravity is a bichiral (bosonic) flow. We already know that supergravity gathers in bunches, forming much larger tornadoes.

Rotational , wormhole -like flows are bundles of axialized filaments .

If for each filament (**i**) in the bunch, **Cci → 0** and is stable and **Cfi**, **Cei** are maintained, then the filaments can form a much larger tornado, the mother tornado. The filaments (arms) can extend to connect with distant areas, without decoherence . This is *the kinematic model of a stable wormhole***,** which attracts everything around. It is the same *helical kinematic entanglement* which can be found at any dimensional scale, from the quantum level to the galactic level.

5. *Gravity technologies use the IN-filament-OUT sequence*

In a vortex tube there are two regimes of captive witness velocities:

A. Tangential velocity (Vt)

- determines the local tightening of the vortex;
- is limited by the internal energy balance of the flow;
- it has a natural ceiling.

This means that Vt is a velocity of internal organization of the local geometry, not of transport.

B. Axial velocity (Va)

- geometrodynamic transport speed ;
- it is controlled by the IN–Filament–OUT relationships and attractors;
- may increase as the radius decreases;
- it is not directly constrained by an internal "resistance" (such as Vt).

The principle of axialization , resumed :

For a helical flow with a strictly constant Cc (flow constant) (the flow variability tends to zero, but never becomes zero), an axial suction imposed by the attractor causes a kinematic compensation through axial acceleration much faster than any increase in tangential velocity .

As the radius r decreases towards the center, the axial velocity becomes dominant, and the tangential velocity grows more slowly — a process that leads to thinning filamentous and undetectable transport. In the regime of maximum efficiency (superfluid transport), the amplitude of the oscillations is minimized and the wavelength increases (regime with minimum amplitude and maximum wavelength); the resulting matter, superfluid and invisible to conventional detectors , it is called "black".

IN — convergent, vanishing phase

In the IN regime, the flow geometry contracts tangentially, the cross-section drops steeply, and the entity becomes much too small in size to be **detected** . The geometrodynamic mass **(Mgd)** is "confined" in the extremely small geometry.

filament – by axialization - the filamentary phase of transport, in a coherent and invisible regime

The helical flow cylinder, at the limit, becomes a filament, a capillary vortex, a fundamental state of invisibility. The radius limiting condition

$$r \to 0, \qquad v_t, v_a \to \infty,$$

leads to an elongated, ultra-thin flow, with a radius below the detection threshold and an extremely fast axial advance. Due to the limiting conditions of the attractor energy, the filaments will be hollow inside. They behave like true cylindrical webs with an extremely high axial flow.

We compare the scaling laws:

$$v_t \propto r^{-1/2}$$
$$v_a \propto \lambda r^{-3/2}$$

With $\lambda \to \infty$, clearly:

$$\boxed{\lim_{r \to 0} \frac{v_a}{v_t} = \infty}$$

so $\boldsymbol{v_a}$ v will increase by an exponent 1 unit greater than v_t, amplified by λ.

In this regime:

- the material structure is axially distributed (has no detectable volume),
- the interaction in the electric and magnetic dimensional spectrum decreases dramatically (transparency effect),
- Axial transport is fast, unobstructed and can be coupled at the ends with other transports

*The filament represents the state of coherent and undetectable transport — the object exists as axially distributed **Mgd** and does not interact electromagnetically (gravity, supergravity , and below). Invisibility is an active consequence of the filamentary state .*

OUT — divergent, emergence phase

In this regime, the helical flow expands , recovering volume, geometry, and visibility. The entity becomes observable again.

OUT is the phase where the geometry expands and the entity regains its interaction with photons and local fields."

A civilization capable of manipulating coherent helical flows can induce:

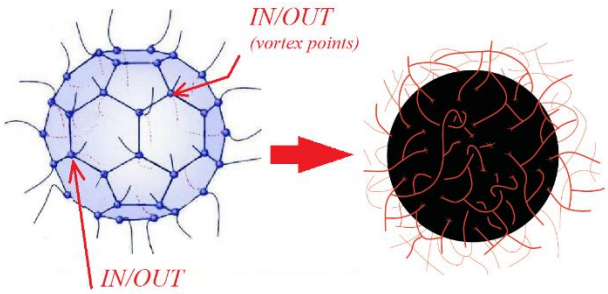
- IN for disappearance/hiding,
- Invisible transport filament,
- Axial coupling with other flows that traverse the Universe (supergravity transport highways)
- OUT for arrival at destination.

This offers:

- total invisibility in the electromagnetic spectrum,
- interstellar mobility (coupling to huge transport networks)
- bypassing relativistic limits,
- absence of detectable signatures in transit.

Advanced technologies exploit the sequence IN → Filament → OUT: initially IN is induced (geometric concealment), then the filamentary state of invisible transport is maintained, and at the destination OUT (reappearance) is triggered. The use of coupling points, on the highways of the Universe, indicates the importance of maps of these "stations". The Earth presents regions where the appearance and disappearance of unidentified aerial phenomena is frequent.

Advanced civilizations are practically invisible in the filamentary transport regime . Detection is possible only in the IN phase (local disappearance), in the OUT phase (sudden appearance) or in case of environmental disturbances (possible secondary interactions). This model explains why UFOs are observed that disappear instantly and can appear in another place without an intermediate signal.



Lidar Wormhole

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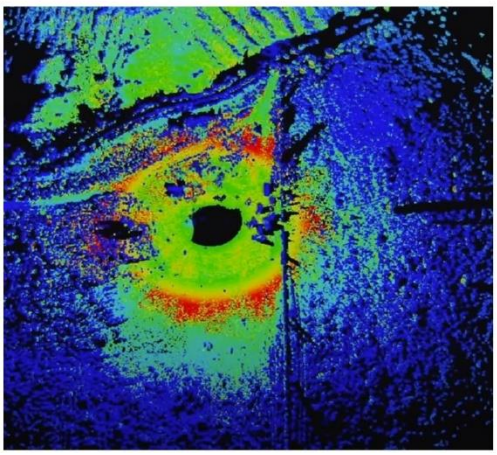

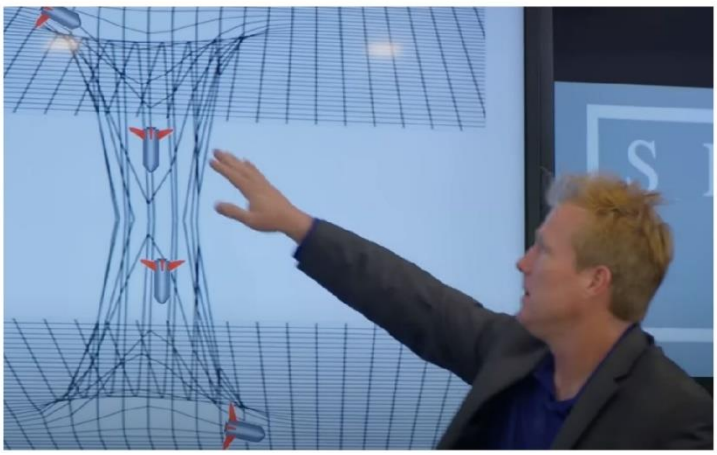

Therefore, in this regime, transport technologies do not produce emissions along the route and cannot be tracked by radar.

So, the IN–filament–OUT model offers :

- systemic openness
- a unified framework for dark matter (cosmic filamentary transport),
- a natural mechanism for accelerated expansion (local OUT regime),
- the foundation of advanced electromagnetic transport and camouflage technology,
- coherent interpretation of modern UFO phenomena.
- coherent explanation of areas with frequent UFO-type disappearances and appearances (stations on the highways of the cosmos)

The Unified Theory positions itself as a general theory, of which known physics represents only particular cases.