Journal of Holography Applications in Physics
Volume 6, Issue 4, Summer 2026, 16–27
©Available online at http://jhap.du.ac.ir
DOI: 10.22128/jhap.2026.3120.1154
Online ISSN: 2783–3518

Regular article

Correlated Time Flow over Emerging Mass Holograms in the Euclidean Space of Observation

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Received: November 3, 2025; **Revised:** December 27, 2025; **Accepted:** January 27, 2026

Abstract. Metric-kinetic self-acceleration can quantitatively introduce a chronal (instantaneous) reason for the non-local emergence of active and passive field masses in their holistic distribution. Four Hilbert variations of Ricci's action for a holistic hierarchy with Euclidean matter-space and dilated time invariant reveal a monistic analogue to Einstein's Equation. The Ricci scalar and holographic mass density can similarly be described by local relativistic acceleration arising from the primary cause of metric time dilation due to chronal information correlations. Shannon optimal distribution of information defines equilibrium metric stresses and the inhomogeneous chronal flow which is responsible for the local generation of mass densities in a holistic field hierarchy. Non-metric information perturbations temporarily drive the monistic universe of massive holograms "from being to becoming".

Keywords: Field Monism; Geometrization of Masses; Chronal 4-Interval; Self-Action; Euclidean Space.

Contents

1 Introduction

The analysis of observed scattering of electrons detected on the screen after individual passage through a double slit has long confirmed De Broglie's idea of wave-like elementary particles, supporting the basis of the wave function in different formulations of quantum mechanics for the so-called microworld. In principle, it can also be used for macroscopic scales, where wave matter is a time-averaged hologram of holistic wave formations whose adaptive correlations in geodesic distributions do not change the volumetric mass or other mechanical integrals of motion at any moment in world time. Not only a wave electron, but also an isolated molecule or a macrocrystal at equilibrium, can be considered a holistic field object composed of mutually superimposed elementary holograms that establish instantaneous density correlations throughout physical space to preserve volumetric integrals of mechanical motion at any given point in time.

The ability of metronomes with weak attenuation to synchronize on a common table was first noted by Huygens. Dissipative processes can destroy the holistic self-organization of formed micro- and macro-holograms, as well as lead to chemical reactions and structural evolution in a monistic environment. Due to dissipation, there is a temporal transition "from being to becoming" [1], with new distributions of strongly and weakly correlated hologram formations. In fact, quantum holograms of auto-synchronized oscillations generate the observable world of mechanical bodies in the form of steady macroscopic patterns of a continuous wave medium.

Prigogine's transition "from being to becoming" is only a rearrangement of the distribution of wave matter in the four-dimensional world of holograms. The three-dimensional screen of shared observations forms a monistic average of variable field masses, including their stable complexes for observers. By accepting holographic representations of wave matter as the basis for observed events, physicists will need to abandon the dualistic standard model of particles and force interactions in favor of a monist model of field environment. Here, quasi-elastic extensions of holistic hierarchies allow for episodic energy exchanges leading to the slow evolution of a monistic universe with heat and quantum fluctuations.

The standard model of monistic physics for holistic self-action and secondary interactions begins with the mechanism of chronal formation and geometrization of isolated mechanical densities. Only after information modeling of 'being' and the chronal origin of geometrical mass-energy can we begin to develop a theory of non-metric force exchanges based on Newtonian non-relativistic mechanics. This paper aims to explore the fundamental monistic principles of Russian cosmism [2–6] and apply the non-dual analogue of Einstein's equations to develop a chronal theory of instantaneous communication for the undivided world of field holograms.

2 Duality in Einstein's Equations

Logical iterations to find the relation between the Ricci tensor and the matter tensor on the basis of the dualistic model of geometrized fields and non-geometrized masses finally led Einstein [7] to the tensor field equation on 2 December 1915. Today's textbooks of such dualistic physics with pairwise fundamental interactions recommend deriving this famous equation of General Relativity mathematically by varying the action of the immaterial field

$$\delta S_g = -(c^3/16\pi G)\delta\int R\sqrt{-g}d^4x = (c^3/16\pi G)\int\sqrt{-g}d^4x[(g_{\mu\nu}R/2 - R_{\mu\nu})\delta g^{\mu\nu} - g^{\mu\nu}\delta R_{\mu\nu}],$$

and the action of matter $\delta S_m = \int T_{\mu\nu}\delta g^{\mu\nu}\sqrt{-g}d^4x/2c$ by the metric tensor components $\delta g^{\mu\nu} \equiv \delta g^{\nu\mu}$ according to Hilbert's technique [8],

$$0 = T_{\mu\nu} + \frac{c^4}{8\pi G}\left(g_{\mu\nu}\frac{R}{2} - R_{\mu\nu}\right). \tag{2.1}$$

In the most general case, local zeroing of the sign-variable subintegral densities is inadmissible, $g^{\mu\nu}\delta R_{\mu\nu} \neq 0$, although the theorem that the integral

$$\int \sqrt{-g}d^4x g^{\mu\nu}\delta R_{\mu\nu} = \int d^4x \partial_\mu(\sqrt{-g}w^\mu) = 0,$$

can be nullified on the remote Gaussian surface [9]. Einstein's attempts to complete his field tensor $G_{\mu\nu} \equiv R_{\mu\nu} - g_{\mu\nu}(R/2)$ by a lambda term $g_{\mu\nu}\Lambda$ with a finite scalar density Λ were not successful. Nevertheless, generalizations $\tilde{G}_{\mu\nu} = G_{\mu\nu} + \Lambda_{\mu\nu}$ for the Einstein tensor in equation (1) could contain such traceless contributions $\Lambda_{\mu\nu}$, which, under the tensor convolution $g^{\mu\nu}\tilde{G}_{\mu\nu} = g^{\mu\nu}G_{\mu\nu} = -R$, would preserve the Ricci scalar density R and the Bianchi geometric identities, $0 \equiv \nabla_\nu G^\nu_\mu = \nabla_\nu \tilde{G}^\nu_\mu$.

Subsequent attempts by Einstein to improve equation (1) were associated with the non-dual field approach and the negation of the right-hand tensor $T_{\mu\nu}$ from the dualistic demands of the mechanical worldview. Einstein repeatedly called for a transition to non-dual physics of material fields based on the geometrical basis of tensor $G_{\mu\nu}$ alone. Below, we will continue with these reasonable attempts, relating the scalar Ricci density $R > 0$ to the divergence of geometric accelerations, corresponding to emerged non-local masses with the instantaneous chrono-communication within their holistic matter-space.

3 Independent time and space invariance within the metric interval

Pseudo-Riemannian geometry for the 1+3 description of 4D holistic hierarchies is very attractive because it can separate chronal and spatial sub-intervals in the metric 4-interval ds under general covariant transformations of hierarchical coordinates,

$$ds^2 \equiv g_{\mu\nu}dx^\mu dx^\nu \equiv (g_\mu dx^\mu)^2 - (g_\mu g_\nu - g_{\mu\nu})dx^\mu dx^\nu \equiv (cd\tau)^2 - dl^2. \tag{3.1}$$

The metric 4-potential $g_\mu(x) \equiv g_{o\mu}(x)/\sqrt{g_{oo}(x)}$ first appeared in relativistic physics when Einstein derived the geodesic law of motion of the point probe mass in the geometrized fields [10]. The invariant scalar $d\tau(x) \equiv g_\mu(x)dx^\mu/c = g'_\mu(x')dx'^\mu/c \equiv d\tau'(x')$ is the proper time rate of spatial densities in a quasi-isolated hierarchy of holistic mass-energy. The difference of temporal scalars $c^2d\tau^2 - ds^2 \equiv (g_\mu g_\nu - g_{\mu\nu})dx^\mu dx^\nu \equiv (g_i g_j - g_{ij})dx^i dx^j \equiv dl^2$ corresponds to such a relativistic scalar which, under general covariant transformations $x \to x'$, does not go beyond the spatial 3-section. Here the metric tensor of the field 3-space $\kappa_{ij} \equiv g_i g_j - g_{ij}$ should not depend on the coordinate time changes dx^o/c. Since geometrical time of 4D organizations depends in the general case on correlated changes of all four system coordinates x^μ, the metric subtensor κ_{ij} for the 3-space section of a pseudo-Riemannian holistic manifold should not depend on its spatial coordinates either, $g_i g_j - g_{ij} = \delta_{ij} = const$ and $g^{ij} = -\delta^{ij} = const$.

The Euclideanity of the common three-space of overlapping elastic hierarchies ('beings' with slow inelastic exchange for undivided world evolution towards 'becoming') must be a fundamental property of all spacetime organizations, with their specific proper times $d\tau$ in

the hierarchical four-potential $g_\mu(x) = \{g_{oo}(x)/\sqrt{g_{oo}(x)}; g_{oi}(x)/\sqrt{g_{oo}(x)}\}$. Relatively weak inelastic exchange between quasi-elastic hierarchies of extended masses does not change the Euclidean geometry of their material volumes. And this universal 3-geometry for the shared space of volumetric superposition becomes common for all bodies and observers.

4 3D space-matter to observe 4D organizations

Correlated accelerations of field mass densities in an elastic organization of self-gravitating matter do not obey the Newtonian scheme of pair interactions in the inelastic scenario of one-way energy transfer to the accelerated body under the action of external forces. The classical mechanics of inelastic forces in the laboratory has been very successful for the studied motion of the mass integral m, due to the fact that in practice the energy of push exchanges towards 'becoming' is always much smaller than the elastic rest energy of 'beings', $mc^2 \gg \delta(mv^2/2)$. The 'logical' application of the local push (or pull) of inelastic exchange from laboratory physics to distant external forces between point centers of elastic self-organization has replaced the holistic self-action of continuously distributed mass and energy with the dual scenario of pair interactions in the void. This ontological trap has led to the dogma of the Standard Model of physical interactions based on four fundamental forces, which can hardly explain the elastic self-organization of material densities with non-local feedback.

In holistic physics, there are no partners in the undivided whole, and consequently there are no interactions between non-existent partners. There are only local self-actions for correlated densities and stresses in each non-local hierarchy. In reality, inelastic energy exchanges with corresponding force characteristics for elastic self-organization of the solar system, for example, are so small that they have practically no influence on the laws of self-acceleration for geodetically moving masses without forces.

A quasi-elastic body can be successfully modeled to describe low-energy inelastic exchange through a point center of mass, although with a huge rest-energy. However, it is unacceptable to assume a point mass in empty space for coherent description of internal geodesics within a continuous distribution of elastic densities in an extended body with holistic regulations. Each elastic distribution of field matter fills 3-dimensional space of observations according to the laws of quantum mechanics, and spatial superposition of the densities of such extended hierarchies, or non-local holograms of elementary masses, eliminate the concept of empty space from physical reality of elastic self-organization with rest-energy mc^2.

The holistic distribution of field mass without external influences unambiguously defines relationships or correlations throughout the volume. The space-time organization of such quasi-isolated hierarchies can be geometrized according to the rules of pseudo-Riemannian manifolds. At the same time, an observer can describe inaccessible 4D diversity for autoformed holistic manifolds based on measured distance intervals in common space of physical observations dl^2 and measured intervals of physical events $ds/c \equiv \sqrt{d\tau^2 - dl^2/c^2} \equiv d\tau\sqrt{1-\beta^2}$. Therefore, available measurements on a three-dimensional observation screen lead to both gravitational dilation of laboratory time $g_o dx^o < dx^o$, and the kinematic stretching of the muon lifetime $10^{-8}c$ on multi-kilometer tracks of ultra-relativistic beams.

The specific interval $cd\tau$ is the defining factor for the observed 4-geometry of each holistic hierarchy. The spatial overlap of holistic distributions with the universal 3-geometry creates an ensemble of elementary field distributions that, due to energy perturbations and permanent evolution to new hierarchical states, will no longer be described by strict geometric relationships. For a relativistic description of the monistic medium of intersecting

mass holograms with quantum fluctuations and temperature perturbations, thermodynamic methods will be more in demand than geometric ones.

Once again, the holistic physics of field holograms in extended quasi-elastic hierarchies allows for continuous superposition of non-local matter. Small inelastic interactions in such a monistic field medium can be based on continuous holograms of De Broglie-Bohm waves with their partial decoherence for slow-world evolution. By ignoring inelastic interactions for most cosmological applications, each cosmic hierarchy follows the elastic holism of its field-matter densities with constant mechanical integrals of motion. The holistic self-organization of non-locally or geometrically arranged field-matter can be non-dually described by Hilbert's action integral, employing only the Ricci scalar $R > 0$ for the geometrically arising mass densities. These positive densities correspond to the local sum of active and passive mass, $c^2R/8\pi G = \mu_a + \mu_p$, with the relativistic field equivalence $\mu_a = \mu_p$ in equilibrium without non-metric perturbations. There is no need to duplicate the field-matter in (1) by additional energy-stress densities $\mathrm{T}_{\mu\nu}$ for inertial substances in the new monistic physics of massive field holograms.

5 Chronal correlations define mass-energy on the Euclidean screen of observation

The 2008 non-dual analogue of Einstein's equation for the static self-organization of radial masses relates their continuous densities to the local Ricci scalar ([11])

$$R(r) = [\mu_a(r) + \mu_p(r)]8\pi G/c^2.$$

The emergence of static mass density around the center of spherical symmetry is associated with the strength of post-Newtonian fields or corresponding relativistic accelerations

$$a_i \equiv u^\nu \nabla_\nu u_i = -u^o \Gamma^o_{oi} u_o = -\partial_i ln g_o = \partial_i ln(1 + r_o/r).$$

Such nonzero accelerations are also characteristic of probe masses fixed in space, if they are not allowed to fall freely towards the center of the metric stress.

For isolated field masses without dissipative losses, geometrically consistent 4D states should be expected not only for static densities, but also for stationary rotating distributions, as well as self-pulsating densities while maintaining volumetric integrals of mass and spin. For a time-varying hologram of Euclidean densities with a symmetric tensor $g_{\mu\nu} = g_{\nu\mu}$ in 4D geometry, the Ricci scalar density $R = g^{\mu\nu}R_{\mu\nu}$ can be rewritten as the divergence of 4-acceleration in the field tensor $B_{\mu\mu} \equiv (\nabla_\mu a_\nu + \nabla_\nu a_\mu)$. This symmetrical curvature of holistic fields results in their stress-energy tensor $\Theta_{\mu\nu} \equiv (g_{\mu\nu}B - 2B_{\mu\nu})c^4/16\pi G$ and the Lagrangian equation of corresponding motion in proper space-time:

$$0 = \nabla_\nu \Theta^\nu_\mu \equiv \frac{c^4}{8\pi G}\left(\nabla_\mu \nabla_\nu a^\nu - \nabla_\nu \nabla_\mu a^\nu - \nabla_\nu \nabla^\nu a_\mu\right) \equiv \frac{c^4}{8\pi G}\left(-R_{\mu\nu}a^\nu - \nabla_\nu \nabla^\nu a_\mu\right). \quad (5.1)$$

Hereinafter, we relate the mass-creating Ricci scalar to the local divergences of four-accelerations: $R \equiv g^{\mu\nu}R_{\mu\nu} = \nabla_\mu a^\mu + \nabla^\mu a_\mu \equiv g^{\mu\nu}B_{\mu\nu} \equiv g^{o\nu}B_{o\nu} + g^{i\nu}B_{i\nu} \equiv B^o_o + B^i_i \equiv B$. Realizing that relativistic auto-accelerations in holistic 4-geometry are responsible for the physical mechanism of the emergency of passive, μ_p, and active, μ_a, mass densities, one can give the time-varying generalization,

$$\begin{cases} \mu_p(x) \equiv \frac{c^2}{8\pi G}B^o_o(x) \equiv \frac{c^2}{8\pi G}(\nabla_o a^o + \nabla^o a_o) \equiv \frac{c^2 g^{o\nu}}{8\pi G}(\partial_o a_\nu + \partial_\nu a_o - 2\Gamma^\mu_{o\nu}a_\mu), \\ \mu_a(x) \equiv \frac{c^2}{8\pi G}B^i_i(x) = \frac{c^2}{8\pi G}(\nabla_i a^i + \nabla^i a_i) \equiv \frac{c^2 g^{i\nu}}{8\pi G}(\partial_i a_\nu + \partial_\nu a_i - 2\Gamma^\mu_{i\nu}a_\mu), \\ \mu_p(x) + \mu_a(x) = \frac{c^2}{8\pi G}R(x) = \frac{c^2}{4\pi G}\nabla_\mu a^\mu = \frac{c^2}{4\pi G}(\partial_\mu a^\mu + \Gamma^\mu_{\mu\nu}a^\nu), \end{cases} \quad (5.2)$$

of static mass densities in the radial distribution $\mu_p(\mathbf{r}) + \mu_a(\mathbf{r}) = c^2 R(\mathbf{r})/8\pi G$ [11].

Six out of ten Hilbert variations in the holistic field action $-c^3/16\pi G \int d^4x\sqrt{-g}g^{\mu\nu}B_{\mu\nu}$ go to zero for Euclidean 3-space due to its geometrical constrains, $\delta g^{ij} \equiv \delta(-\delta^{ij}) = 0$. Four remaining degrees of geometrical freedom lead to the non-dual analogue [11,12] of Einstein's Equation after variation of the field action by four independent components $g^{o\mu}$ of the metric tensor:

$$\frac{c^4}{8\pi G}\left(g_{o\mu}\frac{B}{2} - B_{o\mu}\right) = 0. \tag{5.3}$$

By raising the index in four tensor relations (5.3), we can find three metric bounds for geometric 4D formations with pulsations and rotations ($g^{oi} \neq 0$). The fourth bound in mixed indexes, $(B^i_i - B^o_o)c^2/16\pi G = 0$, confirms the principle of numerical equivalence for active and passive mass densities in the absence of dissipation and other nonmetric perturbations in the non-dual relations (5.3).

For static autodistributions of the field mass, when

$$g_{oi} = 0, \sqrt{g_{oo}} \equiv g_o = u_o = 1/u^o \neq 0, u^i = u_i = 0, a_o \equiv u^\nu \nabla_\nu u_o \equiv u^\nu(\partial_\nu u_o - \partial_\nu u_o) = 0,$$

the non-dual field equation (5.3) reads as

$$g_{oo}\nabla_\lambda a^\lambda = 2\nabla_o a_o = -2a_i\Gamma^i_{oo} = -2(-\partial_i lng_o)g_o\partial^i g_o,$$

or

$$B = 2(\nabla_o a^o + \nabla_i a^i) = 4\delta^{ij}\partial_i lng_o \partial_j lng_o.$$

The numerical equality of the passive (time-time, yin, unobservable, $B^o_o c^2/8\pi G$) and active (space-space, yang, observable, $B^o_o c^2/8\pi G$) mass densities, verified by the static state with $\nabla^o a_o = \nabla_o a^o = \Gamma^o_{oj}a^j = \nabla^i a_i = \nabla_i a^i = \partial_i(-\delta^{ij}a_j)$, provides the self-consistent metric solution $\sqrt{g_{oo}} = rc^2/(rc^2 + GM)$ and radial mass densities ([11])

$$\mu_a = \mu_p = GM^2c^2/4\pi r^2(rc^2 + GM)^2,$$

without references to Newtonian gravitation.

Why does the geometrization of four-dimensional self-formation lead to the appearance of two equivalent masses? What is their energetic significance for the holographic world of three-dimensional observation? The active (spatial) density of the volumetric mass m_a (or the mechanical charge $\sqrt{G}m_a$ of a holistic hologram) manifests itself on the Euclidean screen of shared observation due to positive (yang) energy $+m_ac^2$, which can exhibit itself in collisions with other hierarchies. The chronal (passive) mass density of the same metric self-organization corresponds to an unobservable flow of proper time through a three-dimensional volume of spatial (active) mass. The passive (chronal) mass distribution is adaptively regulated by the logarithmic self-potential (Shannon information capacity for self-gravity) to maintain invisible self-action with negative (yin, $-m_pc^2$) energy integral [13,14].

During the holistic self-organization of a 4D geometric hologram, spatial mechanical energy $+m_ac^2$ is supplied to the Euclidean space-screen for world observations. And the source of observable holographic energy is the invisible dilated flow of the proper time $\tau(x)$. This chronal flow of instantly correlated metric time rates is specific to the averaged wave densities of each non-local hologram. Being invisible to observers, it is precisely the chronal properties of holistic holograms that are fundamental, since they generate the physical existence of observed hierarchical energies.

These correlated flows of proper times are specific to the wave densities of each non-local hologram and are hidden from observers. It is precisely the chronal properties of the 4D

formations that are primary, since they generate the existence of the observed mass-energies in the further temporal process 'from being to becoming'.

6 Discussion

The transition from the Newtonian worldview to a monistic interpretation of observations, based on stable complexes of holographic wave matter averaged over laboratory time and space, requires a transition to a holistic philosophy of material fields and the pan-unity of their thermal and quantum superposition. The dualistic division of an inhomogeneous medium into compact regions of visible densities (massive bodies) and sparse regions (empty space) is only a convenient method for simplifying the description of energy and momentum transfer between centers of metric stresses. Their interaction in isolation cannot be described by a dual model. The geometric nature of mass density does not appear in relativistic generalizations of dual mechanics, which are based on the assumption of discrete particles.

Four time-varying balances $\Theta_{o\mu} = 0$ in the non-dual reduction of ten dualistic equations make the self-gravitating dynamics of Euclidean matter-spaces self-contained, since the holistic metrics can be found independently of Newton's gravitation or other simplified theories. Recall that we do not postulate the Einstein equivalence principle for passive and active masses. Instead, we analytically derive the equivalence of time-varying mass densities from the monistic field equation after raising its index μ (the fixed index o cannot be raised).

Note that only non-metric perturbations of spacetime auto-dynamics (5.1)-(5.3) would break the local mass equivalence, $\mu_p(x) \neq \mu_a(x)$. of isolated self-organizations. The relation $B^o_o(x) = B^i_i(x)$ for metric mass equivalence allows us to find self-consistent solutions for the metric potential $g_o \equiv \sqrt{g_{oo}}$. Also, three consequences, $B^i_o(x) \equiv \nabla_o a^i + \nabla^i a_o = 0$, from the variational equation (5.3) allow us to find the vector potential

$$g_i \equiv g_{oi}/\sqrt{g_{oo}} = \beta_i = \delta_{ij} dx^j/cd\tau = \delta_{ij}\beta^j,$$

in correlated autodynamics with $u_i = 0, u^i = \beta^i/\sqrt{1-\beta_i\beta^i} \neq 0$ for metric organizations with rotations and oscillations under constant volume integrals of mechanical motion.

Again, the relativistic invariance of the zeroing of purely chronal (time-time) components of the stress-energy tensor, $\Theta^o_o = 0$, is responsible for the geometric creation of active and passive mass densities. Similarly, a zero balance of space-time components,

$$g^{i\mu}\Theta_{o\mu} \equiv -\frac{c^4}{8\pi G} g^{i\mu} B_{o\mu} \equiv -\frac{c^4 \delta^{ij} B_{oo}}{8\pi G g_o}\left(g_j - \frac{g_o B_{oj}}{B_{oo}}\right) = 0, \tag{6.1}$$

leads to the emergence of a metric-kinetic three-potential, $g^i \equiv g_o g^{oi} = \delta^{ij} g_j$, and spin densities for holistically moving field masses. These local autodynamics clarify the emergence of volumetric spin in self-contained geometric hierarchies with differential rotations of inertial densities. The three-component balance (6.1) is essential for a self-contained metric theory to independently define the 3-potential $g_i \equiv g_{oi}/g_o = \delta_{ij} g_o g^{oj} \equiv \delta_{ij} g^j$ for correlated motions of self-assembled densities. Recall again that the metric potential $g_o \equiv \sqrt{g_{oo}}$ was already defined independently of Newtonian gravity in the static self-organization of radial masses [11]. Applied calculations of the autodynamics of holistic field masses with toroidal and cylindrical rotations are possible based on the metric equations above. However, these calculations go beyond the aims of this methodological article.

The metric relations for correlated mass densities (5.2) have static solutions even for inhomogeneous mass distributions when $\partial_i \mu_p = \partial_i \mu_a \neq 0$. There is no free fall towards the center of equilibrium densities that have $a_i \neq 0$ and $a_o = 0$ contrary to the geodesic condition $a_\mu = 0$ for very dense probe masses. It is surprising in the monistic physics of

distributed holograms that the geodetic fall can elastically return probe masses back from an extremely dense region. The theoretical existence of static mass distributions in (5.2) and the elastic return 'of the same' in the absence of inelastic exchange on vertical Kepler orbits resolves the gravitational Bentley paradox for Newtonian physics. Thus, the holistic organization of massive fields with adaptive self-gravity denies Newton's point-mass collapse in a void.

Unlike the dualistic equation (2.1), the monistic field equation (5.3) does not fit with the Newtonian worldview, which is based on paired interactions and pulling through the void. Instead, these four geometric constraints for the massive field distribution with negligible inelastic perturbations support self-gravity for the continuous medium through Lomonosov's self-pushing of visible compactifications "from here to there" [16]. The Umov-Tsiolkovsky monism of the etheric universe [2,17], the feedback adaptability of overlapping distributions and their nega-entropic self-assembly, is ignored by mainstream textbooks on black holes and the Standard Model of mutual interactions, which are called fundamental forces. There is a lack of understanding of the conceptual role of universal (Euclidean) geometry in the shared space-screen of common observations. Moreover, dualistic physics describes only mutual interactions without self-action and has no clear mechanism for creating masses. Monism makes mass-energy a secondary concept, causing it to be created for physical observations due to primary chronal flows with correlated dilations of proper time rates.

In Minkowski space-time with homogeneous time flow, there would be no reason for the emergence of masses or relativistic rest energies. Again, when the inhomogeneous affine connections related to the local stretching of the metric time go to zero in Minkowski spacetime, not only does the observable field disappear in Euclidean 3-space, $a_i = -\Gamma^o_{oi} = -\partial_i ln g_o \Rightarrow 0$, but also the generation of local masses in the laboratory space of common observations stops. By controlling the local time flows through external interventions on metric correlations, one can locally control gravity versus inertia or disrupt non-local self-organization of hierarchical biospace, for example in tumors, bacterial infections and other pathological regions.

For some reason, it is believed that if the theory of curved space adequately describes the measured corrections to classical Newtonian mechanics, then everyone should abandon the Euclideanness of space. Many physics journals still ignore the logic of scientific evidence [18] and sincerely believe that the Schwarzschild warping of Euclidean 3-space in the textbook metric, $ds^2_{1916} = [(rc^2 - 2GM)dt^2/r] - [rc^2dr^2/(rc^2 - 2GM)] - r^2d\Omega^2$, has finally been proven in practice without physical alternatives. However, the field-mass metric with Euclidean space $ds^2_{2008} = c^2dt^2[rc^2/(rc^2 + GM)]^2 - dr^2 - r^2d\Omega^2$, is also successful at theoretically describing all measured corrections to Newtonian gravity [19]. The static metric of 1916 was logically criticized by Einstein due to unphysical singularities [20]. Despite there being no mathematical error in the Schwarzschild solution to the dualistic equation (2.1), the holographic physics of averaged wave masses will probably reject it after the expected falsification of warped 3D space in non-local macro-quantum experiments with precision accuracy.

7 Conclusion

By summarizing, the accessible (yang) origin of active spatial mass densities under geometric self-organization can be related to the primary course of proper time flow over a Euclidean screen of observation. Based on this chronal autogeneration of correlated field masses in the non-dual equation (5.3), one can support the conceptual conclusions of Russian cosmists [3,5,6] about the need to experimentally study time as an unobservable energetic substance (carring the negative energy of self-gravitation $-mc^2$ [14]) and the root cause of physical

events in common observations.

Since time is the primary reason for the holographic formation of mechanical distributions, and not just a tool for describing energy, it is advisable to raise the issue of natural references [21] for invisible flows of substantial time with yin-yang energy balances. Continuous distributions of Shannon's bits of immaterial information with instantaneous communication in metric stresses and non-local masses can, in principle, serve as basic references for matter-generating time flows in hologrammic patterns and their inelastic charges. Following Aristotle [22] and Prigogine [1], it will be necessary to distinguish between reversible time of elastic movements-oscillations in nonlocal hierarchies and unidirectional thermodynamic time for evolutionary processes of emergence of "becoming" due to inelastic perturbation of Shannon information in established non-local formations of self-correlated "beings".

Such an informational approach to the initial holistic holograms and evolutionary change of the average densities of entangled holographic patterns on the global observation screen requires a monistic generalization of geometric field equations (5.1) - (5.3), in order to include additional contributions from inelastic (non-metric, dissipative) interactions with "the rest of the universe". The information basis for proper and thermal time flows and material fields with elastic self-actions and non-elastic interactions could update the Standard Model of particles and forces towards the fundamental holism of each nonlocal "being" and the secondary dualism of different "beings" in their inelastic evolution towards monistic field "becoming".

Data Availability

The manuscript has no associated data or the data will not be deposited.

Conflicts of Interest

The author declares that there is no conflict of interest.

Ethical Considerations

The author has diligently addressed ethical concerns, such as informed consent, plagiarism, data fabrication, misconduct, falsification, double publication, redundancy, submission, and other related matters.

Funding

This research was carried out at the expense of grant No. 23-72-30002 of the Russian Science Foundation.

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