

REDESIGN IN PHYSICS

INFORMATION IS THE KEY

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1. FOREWORD

It is a natural challenge for thinking people to be able to see our fragmented science as a whole. Some determined scientists not only want to imagine unity, but have also set themselves the goal of creating a unified theory, but this has so far been thwarted by some system-level obstacle.

Unlike many, we do not want to bundle existing theories with some mysterious entanglement, hidden dimensions, but we choose a fundamental physical quantity as a starting point that can be used from the quantum scale to the macro scale. For this purpose, kinetic energy seems to be the best, which can be interpreted in both quantum and continuum systems if we do not want to derive the other from one.

We have managed to find a solution to this problem that represents kinetic energy and the quantization information associated with it as a process, and thus a real "*creative spacetime*" consisting of realistic elements is created, which is already the operator of the macro world.

Quantization information carries the effects of previous quantization events and is combined with other linked information and transmitted through subsequent quantizations. Linked information can combine not only with information at the physical level. Our thoughts, our relationships, and even the information carried by this writing can also combine with quantization information during material processes. Information "*received from the air*" also has a real basis, because it is propagated by the collision of air molecules. Every event, information, thought, and action has a consequence.

2. WHY IS REDESIGN INEVITABLE?

I. Newton ¹systematized the laws governing the motion of mass points. Their reliability was supported by daily practice, but with the discovery of the principles of relativity ^{2,3,4} the dilation of elapsed time and the contraction of space relativized the axioms previously considered stable and certain.

Let's take the simplest case of relativity: We have a clock and we are not going anywhere. We start the stopwatch and stop it after 1 s. This is called local time. If we now push a sled on the ice, it will move away from us with a speed v , while covering a distance of x meters. We measure the time $t = 1$ s again on our stopwatch, but the other stopwatch placed on the sled will not show us the elapsed time $t = 1$ s, but $t' = (tv \cdot x/c^2) / (1 - v^2/c^2)^{1/2}$ s - where c is the speed of light in a vacuum. It is a tricky question how we can read a moving clock without interacting with it, but many have argued about this and will continue to do so.

¹ https://vilaglex.hu/Lexikon/Html/NewtTorv_.htm

² https://fizipedia.bme.hu/index.php/Specific_relativity_theory

³ https://lps.elte.hu/leszabo/tudomanyfilozofia/5_rel/

⁴ <https://itszotar.hu/relativitaselmelet-theory-of-relativity-einstein-elmeletenek-alapveto-magyarazata/>

This time dilation does not only occur at high speeds ($v \geq 0.1c$), but we usually only take it into account there. We should take it into account for all relative motion. The conversion of local time to the receding system⁵ is called transformation.

Another problem with calculating the time duration is that the rest (invariant) mass m of the sled moving relative to us is also perceived as larger: $m' = m/(1-v^2/c^2)^{1/2}$, and the distance traveled by x meters is also shortened⁶ by the Lorentz contraction. $E_k = 1/2 m \cdot v^2$ kinetic energy also increases: $E_k' = ((1-v^2/c^2)^{-1/2} - 1)m \cdot c^2$ to a relativistic value.

It should be noted that time passes more slowly near larger masses than near smaller masses. A clock on Earth runs slower than on Mars, which has a smaller mass⁷.

Quantum mechanics practitioners use duration of time as a physical quantity mostly to measure the length of their lunch break. (In quantum mechanics, duration of time is not an operator, but a characteristic of lifetime.) The interpretation of duration only deepens the gap between continuum-based physics and quantum mechanics. If our time measurement is so fragmented, it is no wonder that its value must always be corrected and transformed to derive other physical quantities.

It's funny that the great scientists of quantum mechanics, famous for their practicality, explained macro-scale effects with mystical quantum entanglements, conjectures, mystical quantum friction and fluctuations. Schrödinger's paradox⁸ also tries to transfer quantum phenomena to the macro world, with quite debatable results.

If we calculate velocity, acceleration, mass, kinetic and potential energy, and space-time from the continuous dimensions of space and time, we ignore the effects resulting from the quantization of the constituent elements, which are hidden by the principle of continuity. For this reason, our calculations do not reflect reality. We correct the differences with empirical factors, constants, and complicated procedures, but this only means a numerical and not a theoretical correction.

It follows from the above that any physical model that includes duration of time, the passage of time, or uses it as an operator cannot be considered consistent or free from internal contradiction.

"Scientific anomalies" related to the passage of time allows room for fantastic fictions, because if our scientific theories are not flawless, then why should we restrain our imagination regarding the illusion of wilder-than-wilder worlds?

3. REDESIGN

We present a physical model that, instead of the space and time dimensions and the mathematical product called the space-time continuum produced from them, contains real quantities based on the kinetic energy of the quantizing elementary parts. It can be applied both at the quantum and macro scale.

⁵ https://en.wikipedia.org/wiki/Lorentz_transformation

⁶ <https://hu.wikipedia.org/wiki/Hosszkontrakci%C3%B3>

⁷ <https://www.sciencealert.com/time-moves-faster-on-mars-and-scientists-finally-know-by-how-much>

⁸ <https://www.britannica.com/science/Schrodingers-cat>

It can be used to construct real energy balances free from internal contradictions. Most known physical quantities related to relative motion can be consistently derived from it.

More than 90 percent of our known universe⁹ is made up of hydrogen and helium atoms, molecules, ions, and plasma, which move relative to each other, collide with each other, and bounce back. The moving particles transfer kinetic, or motion energy to neighboring particles they hit during the collision, and then bounce back and receive motion energy.

Normally, after a collision, the total kinetic energy is the same as before the collision, and there is no free potential energy left at the collision site. Collisions must be perfectly elastic, otherwise the particles would have stopped moving long ago, and we wouldn't exist in our present form.

The formation and interactions of subatomic particles are also quantized processes, so we will not highlight them here. Although interactions and transformations between atoms beyond quantization change the transfer of kinetic energy, quantized motion, also called thermal motion, or repetitive change, remains a characteristic of known material systems. Subatomic particles inherit kinetic energy through the mass-energy equivalence^{10 11} properly.

By mass we primarily mean an invariant quantity of matter that can be interpreted the same way both at rest and in motion relative to its environment.

The kinetic energy of molecules, atoms, and other elementary particles is considered to be long-term, while the potential energy stored by elastic deformation during collisions is considered temporary or transient.

The movement and collision of gas molecules and atoms, the wave motion, or the orbit of celestial bodies, the repetitive movement of elementary parts, the repeated recording of discrete maximum-minimum values, We call it quantization. The best-known, tangible cases of quantization are, for example, the bouncing of a ping-pong ball, the movement of a pendulum, the emission of light, the orbit of planets, or the production of sound.

The information associated with quantization opens the door to the macro world, where we can treat recurring events as realistic processes.

If the mentioned quantization information really exists, then we should be able to find its place in energy balances. This requires a fundamental redesign.

⁹ <https://www.sciencetimes.com/articles/11524/20170403/hydrogen-is-the-most-common-element-heres-the-reason-why.html>

¹⁰ <https://plato.stanford.edu/entries/equivME/>

¹¹ https://hu.wikipedia.org/wiki/T%C3%B6meg-energia_ekvivalencia

4. IRRESISTIBLE INFORMATION

The *formation* element in the *information* expression refers to the fact that there is a carrier in the background whose formation is not random, but carries and conveys some order, organizing principle, or effect for those who follow.

We start from the well-known fact that our known material world is made up of colliding, orbiting, accelerating, and decelerating elementary particles, atoms, molecules, bodies, and celestial bodies, and moves, changes, and (in)forms.

A ping-pong ball dropped on a table is quantized as it bounces, or a planet is quantized as it orbits its star periodically. Each quantization typically occurs independently of the others, but the effects of each quantization on the environment are combined. Quantizations do not add up like apples in a basket, because they do not occur at the same time or in the same place, but they can still affect each other through the transfer of information and kinetic energy.

In contrast, the popular physical system called continuum mechanics cannot handle the interaction of the constituent elements resulting from the quantized motion of the elements. It takes the constituent elements into inventory like apples in a basket. During possible transformations, it views the constituent elements as a randomly located set, a medium, of equivalent parts, as if the same thing were happening to each element in the same place, at the same time.

In reality, the components, i.e. atoms and molecules, cannot be frozen in a snapshot because they move with kinetic energy relative to their environment, collide with each other at different places and times, which interactions can only be represented by a process of change. Since the collisions do not occur at the same time, the frequency of the collisions, and the change in the frequency, are also determinants of the measurable resulting effect on the environment.

In the quantization basic case, a molecule moving with kinetic energy collides elastically with its environment. (see *Figure 1*) This process creates a kinetic effect that can be consistently described and calculated using the tools of point mechanics (for example, Newton's laws) in the given situation, which we call **the creative level**. At the creative level, we cannot yet know what the effect will be like at the macro level. (By macro level, we mean the size that includes the multitude of molecules.) The relationship and circumstances of the previous and current collisions are carried by the information about quantization. The macro-level kinetic effect that affects the environment can only be interpreted by taking into account the **quantization information**.

The quantization information includes the frequency of collisions, the change in frequency, and the length of the mean free path. The effect that appears towards the environment is called **the space-time operator**. This already inseparably includes the creative level kinetic effect and the quantization information.

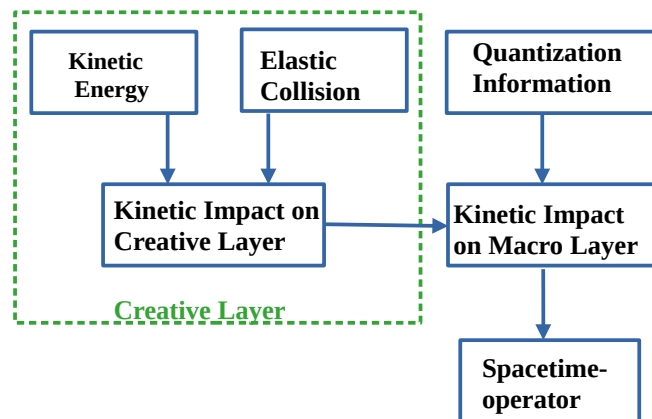


Fig. 1, Quantization process

If the average kinetic energy of moving and colliding (quantizing) molecules in a given air space is not changed, but the mean free path between the molecules is reduced, then this change in quantization information, which does not carry a direct change in kinetic energy, still causes a pressure change at the macro level. This is nothing more than a change in the potential energy appearing towards the environment.

The excess energy released to the environment did not arise from nothing, but is the consequence of a change in quantization, which is carried by a change in quantization information.

A bouncing molecule with the same mass and kinetic energy exerts a greater pressure on the surface of a pressure gauge the more often it collides ^{12, 13, 14}.

An integral part of the environmental, macro-level energy balance is quantization information. In systems containing quantizing elements, we cannot speak of independent matter, energy, or information. The quantization information is contained in the matter itself and is transmitted during a process, from quantizing event to event.

Everything that bounces, collides, orbits, radiates, attracts and repels, that is, the entire known universe, contains, combines and transmits quantization information. The existence of Planck's electromagnetic radiation is also evidence of the universally present quantization, which includes both the periodic variation of the electromagnetic field and the repetitive motion of components with mass. We do not know of any subatomic, elementary particle that does not quantize or collide.

Quantization information organically and consistently connects the phenomena and elements of quantum mechanics to the macro world, without the need for mathematical transformations, conjectures, or mystical tricks. ^{15 16 17} In our opinion, the quantum entanglements that are considered mysterious ^{18 19 20} behind it is the consistent presence of quantization information.

A quantizing particle “does not remember”, but the quantization information “does not forget”.

The subatomic-elements, atoms, and molecules have collided before and hopefully will again in the future, so they carry information about their environment and transmit exponentially spreading information to their environment. Quantizing subatomic particles also have their own creative level, where quantization information is present, just as atoms, molecules, celestial bodies, or galaxies also have quantization information dependencies on their own creative level. Creative levels occur in parallel and embedded in each other. All quantization information can be combined with each other.

¹²

https://www.academia.edu/127550018/UNIFIED_CREATIVE_PHYSICS_MODEL_FROM_ELEMENTARY_PARTICLES_TO_GALAXIES

¹³

https://www.researchgate.net/publication/388833822_UNIQUE_CREATIVE_PHYSICAL_INFORMATION_MODEL_FROM_ELEMENTARY_PARTICLES_TO_GALAXIES

¹⁴

<https://www.magaimotor.magai.eu/>

¹⁵

<https://fizipedia.bme.hu/index.php/Kvantummechanika>

¹⁶

https://scholar.harvard.edu/files/david-morin/files/waves_quantum.pdf

¹⁷

https://en.wikipedia.org/wiki/Erwin_Schrödinger

¹⁸

<https://hu.wikipedia.org/wiki/Quantum-%C3%B6sszefon%C3%B3d%C3%A1s>

¹⁹

https://hu.wikipedia.org/wiki/Koppenh%C3%A1gai_interpret%C3%A1ci%C3%B3

²⁰

https://en.wikipedia.org/wiki/Copenhagen_interpretation

The propagation rate (speed) of the effect and information transmitted through collisions is the same as the rate (speed) of the transfer (collision) of the kinetic energy of the sub-elements and molecules. In the case of electromagnetic waves, the speed of information propagation is the same as the known speed of light. In the case of information transmitted by connection to an external system, there is no physical speed limit. The significance of our personal relationships goes beyond the possibilities of this article.²¹

There are scientists who introduce information into our material system as an existing characteristic, but so far they have not been able to organically link it to the mass-energy system.^{22,23} The information carried by the concepts of disorder and entropy is also not related to the formation process of the actual quantizing elements. It is also a mistake to consider entropy, which is the basis of thermodynamics, as continuous because of general quantization.

The quantization information somehow, at some point – at the beginning – entered the material system and we inherited it. Mass and energy somehow relate to their environment, the outward effect of which is not fully determined (deterministically) by the presence of mass and energy. Information cannot be grasped, but its carriers can. **Information transfer is a process containing quantization elements that spreads unstoppably as long as matter exists.**

The information associated with the presence of matter and/or energy not only connects individual phenomena or events to each other, but also to a process. **Information acts separately from mass and energy, but the result inseparably transmits mass, energy and information** as the future starting point of a subsequent event, where the combination of the carried information and the information received from the environment creates a new result, which as part of the process has a new effect on the environment and carries the combined information further.

It is not energy that is inherited separately into energy, nor is information that is inherited separately into information, but rather the mass-energy-information system is formed under the impact of the received/absorbed information.

5. MOTION ENERGY AS A BASIC QUANTITY

We chose a basic quantity that can be used equally, without transformation, for dynamic effects, high motion speeds, and realistic materials and energy packages consisting of quantizing elements.

The kinetic energy of a point mass can be determined relative to its environment and satisfies the requirement of mass and energy equivalence²⁴. It is a quantity known and used in point mechanics for centuries.

The axiom of conservation of energy (the first law of thermodynamics) states that the total energy of an isolated system is constant. The change in the total energy of a non-isolated system is equal to the sum of the energies introduced into the system from outside. All we do is track the effect of the change in kinetic energy from molecule to molecule, between bodies, or even from galaxy to galaxy.

²¹ https://www.magaimotor.magai.eu/media/pdf/informacios_tapkokkak_magai_2024.pdf

²² https://www.google.hu/books/edition/In_the_Beginning_Was_Information/nHuR3_9V03IC?hl=hu&gbpv=1&dq=inauthor:%22Werner+Gitt%22&printsec=frontcover

²³ https://www.academia.edu/6147414/Entropy_a_guide_for_the_perplexed?email_work_card=view-paper

²⁴ https://hu.wikipedia.org/wiki/T%C3%B6meg-energia_ekvivalencia

Kinetic/motion energy is practically transferred without loss in the case of gas molecules. During molecular collisions (at a creative level), kinetic energy and potential energy are converted back and forth into each other.

Kinetic energy can be expressed by the equation $E_k = 1/2 m \cdot v^2$, where m is the (invariant) mass of the mass point (atom, molecule, celestial body) and v^2 is the square of the velocity of motion relative to its environment. The kinetic energy of a mass point can be calculated from the mass or velocity, based on the knowledge of the other variable. The magnitude of kinetic energy in the case of a collision or braking can also be determined from the effect exerted on its environment.

If we have multiple mass points or multiple collisions occur, it will be necessary to introduce information about the frequency of the collisions, because this determines the average effect, pressure, and force that a given kinetic energy exerts on its environment at a macro level.

The same amount of kinetic energy exerts a greater average force, or pressure, or momentum integral, on its surroundings if the mass point bounces more often in a narrower gap.

It sounds unusual, but the potential energy types present at the macro scale include the space-time operators of quantization information. **Creative space-time operators have their reserved place in energy balances, which has so far been occupied by fictitious operators labeled “dark, internal, mystical, and hidden” for the sake of expediency.**

The use of creative space-time operators also offers solutions to questions such as dark matter, dark energy, the contraction of matter, the expansion of the known universe, the origin and changes of celestial bodies, or the early phenomena of theories of the origin of the universe. ²⁵,

²⁶ ²⁷,

Below, in a table, we compare the static pressure p measured in an ideal gas flowing at a velocity v in an insulated flow tube (adiabatic nozzle) of varying cross-section. The calculation of the change in static pressure p and molecular velocity v_m is using thermodynamics, and the creative space-time operator β , between measurement points 1 and 2. E_k is the average molecular kinetic energy.

QUANTITIES	WITH SPACE-TIME OPERATOR	WITH THERMODYNAMICS
β space-time operator	$\beta = \frac{v_{m2}^2}{v_{m1}^2} = \frac{E_{k2}}{E_{k1}}$	--
p static pressure	$p_2 = p_1 * \beta_2^{(3/2)}$	$p_2 = p_{02} * \left(1 - \frac{(v_2^2 - v_1^2)}{2 * \gamma / (\gamma - 1) * RT_{01}} \right)^{\frac{\gamma}{(\gamma - 1)}}$
v_m molecular speed	$v_{m2} = \sqrt{v_{m1}^2 + v_1^2 - v_2^2}$	$v_p = \sqrt{2 kT / m}$

²⁵ https://www.researchgate.net/publication/336445186_DARK_MATTER

²⁶ https://www.researchgate.net/publication/385379863_SPACETIME-OPERATORS_CREATIVE_PHYSICS_7

²⁷ https://www.researchgate.net/publication/384934237_TERIDO-OPERATOROK_Kreativ_Fizika_7

The p seen in the well-known thermodynamic relations, the adiabatic exponent γ , the universal gas constant R , the Boltzmann constant k , the rest mass m , and the temperature T are fictitious values, and all would need to be corrected by the Lorentz transformation to obtain a realistic result.

The p and v with the creative space-time operator β are already real quantities that also satisfy the requirements of relativity.

If we create external braking, acceleration, heat transfer, or pressure changes during the flow, then we calculate the actual exponent of the creative space-time operator β . When we calculating the exponent of β , we take into account the change in kinetic energy, the change in the mean free path, and the change in the number of molecules acting on a unit surface. A detailed calculation can be found in the literature indicated in footnote 27.

The transformation, dilatation, and contraction formulated in connection with the theories of relativity did not open up a new world to us, but rather corrected the discovered errors in our previously used continuum mechanics worldview in their own way. However, they did not reduce the gap separating them from the quantum world.

6. SPACETIME MODELS

" Spacetime in physics is a mathematical model that unifies space and time in a manifold, describing the structure of the Universe .^{28 29}

Spacetime models^{30 31} Its birth can be traced back to the realization that the dimensions of space and time are not suitable for describing all phenomena. The introduction of space-time expanded the limits of ideas about our world, but rather increased the number of unanswered questions.

If the space-time continuum were applicable to quantizing elements, or to the quantum world, then it would have to include the energy-transforming and quantizing processes that characterize our world in general. We do not find any trace of this in the world models that can be divided into parts by individual events, event lines, and event horizons. It seems that quantization fails in space-time models based on continuity.

If the individual points or sections of our space-time model correspond to individual events, where does their relationship to each other, or the built-in quantization information, appear? Antecedents and consequences cannot be interpreted if we think only in terms of event points, or independent lines or horizons. If the points correspond to independent events, what effect connects or moves them, which is not part of the events to be connected?

If the derivation of time and/or the interpretation of space is not realistic in the case of moving, quantizing components, and we have previously demonstrated its flawed nature, then the space-time continuum determined using it cannot be flawless or consistent either. **In our opinion, continuum-based relativistic space-time theories deviate from measurable reality to such an extent that we cannot use them as a basis for formulating our consistent theory.**

²⁸ <https://hu.wikipedia.org/wiki/T%C3%A9rid%C5%91>

²⁹ <https://wigner.hu/s/matolcsi/old/pdf/note/terido.pdf>

³⁰ https://fizipedia.bme.hu/index.php/Specific_relativity_theory

³¹ <https://www.sciencedirect.com/topics/engineering/spacetime>

7. CREATIVE SPACETIME

The space-time continuum definition presented in the previous chapter is not compatible with the system of quantum mechanics, so something had to be done! Countless theories have appeared that try to bring the contradictory positions to a common denominator with some theory related to time or space-time³². Such theories include: the introduction of information bits, the expanding or inflating Universe, extra dimensions, time dilation, Doppler Shift, quantum entanglement, field equations, uncertainty relations, space-time curvature, cosmological constant, metric tensor description, Spacetime Torsion Resonance... These shed light on a narrow area, but they do not help with the fundamental deficiency that placing quantizing events in space-time necessitates a new model.

If we assemble cosmic matter and energies and the "*grand system*" from locally determined field equations without thoroughly clarifying the interactions between them, we end up in a situation like A. Einstein's with the cosmological constant of the general theory of relativity³³, which changes from time to time due to new discoveries. A. Einstein later called³⁴ the cosmological constant the biggest mistake of his life. We could also say that the cosmological constant was given a gap-filling role, and it is currently playing that role in the ever-narrowing, but still significant gap.

Our model overcomes these problems because the transfer of kinetic energy and quantization information associated with quantizing events places the process of change in real space. This process has a natural connection to physical space and the formation of events.

Information-driven formation maps out a natural space-time, which we call **creative space-time**. A better name could be found, but this makes it easier to contrast with known concepts. We could also call it "*creation*," because it is the basic element of all known existence from the beginning.

Our creative space-time model is natural because it connects real, creative-level events into a macro process that has an extension in time. Events related to spatial elements and their time-extension cannot be separated. Individual events follow each other with a temporal offset, **but time has no direct effect on the energy balance.**

The interpretation of creative space-time meets the realist expectations of A. Einstein as well as the realistic results of quantum theory, which is consciously considered non-realistic.

Continuum mechanics knows reversible processes, but according to creative spacetime, these have no real physical content, so they constitute phantom information. If the information is spread, it cannot be reversed, we can only tinker with something similar, but its antecedent cannot jump at will. We do not know of a process without antecedent.

³² real.mtak.hu/61988/1/EPA00011_iskolakultura_1998_02_038-046.pdf

³³ Einstein, Albert (November 25, 1915). "Die Feldgleichungen der Gravitation" Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin, 844-847.

³⁴ https://hu.wikipedia.org/wiki/Cosmological_constant

8. SUMMARY

We demonstrate that information built into macro systems is equivalent to energy. We can also say that quantizing mass and energy, through their (in)formation, act on their environment. The same quantizing mass and kinetic energy, in a different formation, exert a different external macro effect.

The embedded information or space-time operator associated with quantum events allows us to interpret quantum phenomena and events on macro and cosmic scales, and vice versa. Using creative space-time, several previous conjectures can be proven³⁵, which were wrongly attributed to mystical quantum entanglements,³⁶ fluctuations, or other hidden effects.

Quantization information spreads irresistibly. It is not only a defining element of our material environment, but also a constituent part of all intellectual and spiritual phenomena, linguistic and cultural activities related to our material existence.

Our personal connections can bridge significant spatial distances because not only do neighboring quantizing elements interact with each other during collisions/interactions, but also information processes of distant origin combine and affect each other and distant matter.

The carrier or part of the connection with the embodied being is the part of transferring and combining quantization information. However, this dependence goes beyond the possibilities of our present writing. The author's position on this can be found in the publications^{37, 38} indicated on the website www.magai.eu

Original article in Hungarian: [DOI:10.13140/RG.2.2.29540.23687](https://doi.org/10.13140/RG.2.2.29540.23687)

³⁵ http://www.rmki.kfki.hu/~diosi/slides/simonyi_talk.pdf

³⁶ <https://gyires.inf.unideb.hu/GyBITT/28/ch10s02.html>

³⁷ https://www.magaimotor.magai.eu/media/pdf/megbizhato_informacio_magai_202501.pdf

³⁸ https://www.researchgate.net/publication/383742787_INFORMACIOS_TAPKUCKAK_avagy_AZ_ELTENEK_SZ_EDE

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