Newer *Space Flow models that did not get into the book: Gravity III, Wave function collapse and others

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*Abstract: A longer and better presentation of *Space Flow is made, containing some new models that are the work's most significant to date and that cannot be found in the book.*

The work *Space Flow reached a new stage of evolution in its model for the gravitation phenomenon. The third iteration does not involve drag by the fluid, and perfectly reflects mechanics in the universe at all scales. It resulted from the merging of the 'Gravity II' model with the model for motion in general, both existing at least since 2016.

'Gravity III' model can be found at page 17 in this paper.

For the results obtained in the double slit experiment to be deemed very natural, all we need assume is that radiation is emitted continuously and not just in pulses, and that it ends up connecting the atom that emits it, to a second atom.

Continuous creation and atoms interconnected by radiation filaments were already core ideas of *Space Flow, before visiting the wave function collapse theme; so, more than the work offering a very satisfactory model for the mysterious wave collapse, the outcome of the experiment endorses *Space Flow's core ideas.

The model for the wave function collapse can be found at page 30 of this paper.

I see *Space Flow as a blessed by luck work that delivers the universe unveiled in a set of unified mechanistic models.

The game-changing feature in the work is the notion that space is constituted by filaments that interconnect atoms, rather than by independent cells or particles.

The notion of continuous creation throughout the universe joined in, and duly unified models for all its fundamentals, including what we call time, were conceived with relative ease.

Like a catalyst, the notion of sink-flow gravity kick-started and powered the work all along, only to be mostly put aside in the end, since the last model does not involve drag by the fluid.

The condition in which I produced *Space Flow was that of a pure thinker.

After the work was completed, I started reading a little about physics, and, to get in contact with professional physicists, I indeed started taking a college course at UFMG, a top of the line university, having completed ⅓ of the program as I write this. Not very long after the work's two most important models to date were conceived (mid 2024), I was asked, as a graduation student, to deliver a paper on the evolution of ideas in physics, and took the opportunity to make a longer and better presentation of *Space Flow (20+ illustrations) to the physicists, with the inclusion of the new models.

This way, *Space Flow's new presentation, that is the content of the present paper, is in the form of a college paper on the evolution of the ideas related to gravity's mechanism. Only 2 out of 34 pages are there to satisfy protocolar demands of the college work – the first page, and the upper halves of the second and the third pages –; all the other 32 pages are new science matters, with significance increasing from beginning to end.

So, there is a paper inside this paper, and here it goes:

[* A table of contents can be found at the last page]

Gravity Mechanism

From ancient times until *Space Flow

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In an episode of *StarTalk Radio Show* [5], when asked *"'What is gravity?"*, Neil deGrasse answered instantly: *_"We have no idea. Okay, next question".*

*_ I have over here some spare copies of the book *Space Flow, I can send one to him as soon as he solicits it...*

Ancient times – geocentrism e mysticism

For Aristotle and his contemporaries, Earth was the center of the Universe, with the Moon, the Sun, and everything else on the celestial sphere revolving around it. The reason then accepted for the natural fall of bodies was a search for their proper place, which for the heavy ones would be the center. There was no explanation for gravity other than it simply being a feature in the divine design.

Galileo – experimentation and mathematics

Galileo contributed to the study of gravity conducting experiments, which the ancients had neglected. He obtained that the distances covered by falling bodies are proportional to the square of the time in the experiment. Through the mathematical analysis of these results, he was able to demonstrate that gravity accelerates bodies according to the time-length of the fall, and not the traveled distance. The influence caused by his investigation methods was probably more reverberant than the results he presented. Galileo did not offer a mechanism for gravity in his works.

Gravity had no choice?

A very interesting argument was offered by Galileo[6] to demonstrate that heavy objects cannot fall faster than light ones made of the same material (excepting for the air influence). He said that, if it were true that a lighter object falls more slowly, one should expect that its attachment to a heavier object would slow the latter's fall, just as a parachute would. However, according to the initial hypothesis, the body made up of the two coupled objects should fall more quickly, because its weight is greater than the weight of the heavier individual object. The contradiction is clearly demonstrated, and a similar argument can be constructed to defend that lighter bodies also could not fall faster than heavier ones.

Newton’s gravity – unification of terrestrial and celestial mechanics, and the first hypothesis on its mechanism (sink-flow), partially hidden from history

The title of greatest individual contribution to the study of gravity can only be granted to the one left by Newton. He demonstrated, logically and mathematically, that the falling of bodies on Earth and the orbital motion of celestial bodies follow the same rules, thus unifying celestial and terrestrial mechanics. He established the difference between the concepts of mass and weight, and demonstrated the leading role that mass plays in generating gravity. It was Newton who named the phenomenon, from the word "gravitas", which comes from Latin and means weight.

Newton reflected on a possible mechanism for gravity, a sink-type ether wind toward Earth's interior. After not having success in imagining what end the ether could meet inside the planet, nor in conciliating this idea of bodies being dragged by a flow, with the observation of the orbital motion of the planets, which happens, apparently, without any drag, he informed that he was leaving this investigation to the following generations [*].

The answer to Newton's first question seems to be, to me at least, clear and simple: the substance must flow, by the action of a pressure intrinsic to it, due to be processed by the atoms with volume reduction. Thus, the final end that the 'ether' must find within the planet must be its conversion into ordinary matter.

The second question is not simple by any comparison parameter… A satisfactory answer in my work *Space Flow only appeared recently, in the third iteration of the model for the mechanism of gravity, 15 years after the work began and not before models had been conceived for even more fundamental phenomena, such as motion in general. According to the recent model (which will be presented in detail later in this paper), the flow towards Earth's interior does not generate drag. Whether when falling under the action of gravity, or in any other situation, bodies move by their own means, through the continuous creation promoted by each of their atoms. What unbalances the continuous creation in the vertical direction, and makes dropped bodies accelerate towards the center of the planet, is the density gradient (of *space) generated by the flow’s convergence.

[* This topic of Newton's work appears to be deliberately hidden from history. Details of his childhood and of his quarrels are included in materials for all types of audiences, but this theme, with which he 'passes the baton' of the philosophical investigation of the universe to subsequent generations, is very hard to find.]

Einstein's Gravity: a pseudo-mechanism in his theory, which signals the deficiency in the philosophical basis on which Physics relies still today

Newtonian mechanics presents a serious limitation in the concept of absolute space. The way it was presented, this reference to absolute rest is most usually imagined rigidly anchored to a frame external to the universe (or anchored to some privileged reference) – and this seems to be illogical and incompatible with what is observed. Inspired by studies on phenomena related to electromagnetism, Einstein set out to develop new mechanics, free from this limitation. According to him, "a physics whose equations and postulates are equally valid in any reference frame, regardless of its state of motion". From this proposal the theory of relativity was born; first restricted to inertial frames of reference, and then generalized to accelerating ones, when it became a theory of gravity. *"In effect, the systematic development of the idea of general relativity provided the laws that the gravitational field satisfies"* [7] – he wrote. Special Relativity had Maxwell's work on electromagnetism, and H. Lorentz's work on relativity, as two of its bases, and what made possible for it to become a theory of gravity was the principle of equivalence, which says that gravity and acceleration are essentially the same thing. This principle, which began to be revealed in Galileo's experiments, is one of the greatest contributions to the study of gravity and was formulated by Einstein himself.

TR does not please the natural philosopher because it does not present explanations, endowed with materiality, about how the universe works. But the objection to Einstein's work that is worth highlighting in this text, which is focused on gravity's mechanism, is the inappropriate treatment given to space. The progress of science to beyond Newton's theory involves promoting the evolution of the concept of space, and not the denial that it has an active role in mechanics (*1), as Einstein did. Promote its evolution from an imponderable entity, immobile and rigidly anchored to a frame external to the universe, to, according to *Space Flow, a real thing, made up of mobile and compressible filaments, which are anchored to the atoms and animated by continuous creation.

By obtaining from the surrounding masses a mechanical effect equivalent to that of space, Einstein was able to dispense with it from his theory (*2), except for the pointing out of the entity that generates the force felt during an acceleration. Despite having severely criticized Newton's theory on this point, the truth is that also in his theory the effects of acceleration are caused by space (*3). Einstein admitted this at the end, using harsh words; he said: "The theory has a fundamental defect". The so-called twin paradox illustrates this point. It is common to say that the enigma is dissolved by simply avoiding the accelerating reference frame, but this is not correct, as the real enigma is: "What characterizes the reference frame of just one of the twins as accelerating?" or, equivalently: "Why does only one of the twins feel the acceleration in their own body?" And the answer is that the only twin that accelerates for real, and not just relatively, is the one that accelerates relative to space. Stating that acceleration occurs in relation to all other masses in the universe does not constitute a true alternative, because the influence of the other masses can only be felt indirectly, via space. In addition to saying that his TR contains a fundamental defect, Einstein also declared: *"There is an ether"* (*4) and *"There is no theory of relativity without an ether"*, and all of this, just like Newton's reflections on sink-flow gravity, has been kept partially hidden from history.

*1) For the thinker / for the natural philosopher, the simple fact that distances exist is enough to ensure that space (in its true nature) has an active role in mechanics.
*2) The success in doing this is in full agreement with *Space Flow, whose description of space can in fact be understood as 'the materiality of the influence of the surrounding massive bodies'.
*3) So that there is no risk of lack of clarity: the space that is the entity in relation to which acceleration occurs is not Newton's absolute space, nor is it Einstein's inert-stage space (which, if it received some attribution in mechanics, would convert into Newton's absolute space), but rather the real thing that exists in the immediate surroundings of material bodies, with characteristics according to *Space Flow, given in one of the paragraphs above.
*4) Einstein describes space as an inert stage; so, when he says "There is an ether", I understand that he is saying an ether filling space – two entities. *Space Flow points to the existence of just one entity (and this is consistent with the denial of ether that was made by him when introducing TR), which, to taste, can be called space, ether or any other name, such as, for example, *space (with the asterisk serving to differentiate real-thing space from imponderable-stage space).

Now returning the focus to the theme of this work, gravity's mechanism. Because of the theory of relativity, the general public is told that gravity is a curvature in spacetime, and this is communicated with the status of a mechanism. Presentations with balls on trampolines are made, and it is declared that the *cause* of gravity is the deformation caused by the presence of masses. But time and space are merely parameters invented by us, by which we evaluate and describe motion. Curvature in four-dimensional space is exclusively a representation figure, not a real mechanism for gravity. I imagine that every experienced physicist thinks this way, like Neil deGrasse showed he does. In order for the concept of curvature in spacetime to come close to representing a real mechanism, it would first be necessary to inform what space is and (especially) what time is.

If in a theory space and time are first fused together, and then the set formed by them is curved, we have two possibilities: the theory is not good and should go to the trash can, or, if the theory is good, these two parameters need to go to the trash can. When the parameters that constitute the current philosophical basis of physics – time, space, energy, mass, etc. – are replaced by appropriate and advanced ones, it will be possible to describe any phenomena without the need for fusion or curvature of parameters. The most important message that the theory of relativity conveys is that the philosophical basis on which physics is supported is the limiting factor for the advancement of knowledge today. This can be extracted from several aspects of TR, but mainly from the figure of the curvature of space-time. The legacy of the revered theory should not be the investigation of the universe using its equations, but rather the quest for a new and appropriate philosophical basis for physics.

On from which way gravity comes

Artificially Generating Gravity - Black Holes

In my book *Space Flow, there is a topic that deals with the challenges of developing equipment that reproduces gravitational effects from below – a floor for spacecraft.

Such a floor would have to recognize, from a distance, the existence and the mass of each individual particle (electrons, protons, etc.) of the bodies on which it was to act, maintain updated information about the position and speed of each of them, and then emit individual *traction beams*. The beams would have to pass through a precise number of other particles to reach their target particle.

The proposal to reproduce the effects of gravity from below is demonstrated to be absurd even before thinking about how to generate traction beams and how to transfer energy.

Then I suggest the view that Earth faces exactly the same 'technical difficulties' as the spacecraft floor design, and so we must consider the only alternative, which is gravity coming from above. [It was this 'reverse engineering of processes approach' that generated all models in the *Space Flow work. Having been neglected perhaps for centuries, this approach has almost intact its potential to contribute to the advancement of the understanding of the universe.]

As we know, the effects of gravity can be almost perfectly reproduced simply by making the spacecraft spin. It cannot go unnoticed by cosmological investigation the fact that with something like an *accelerating wind of space*, coming from above, we can so easily accomplish what practical analysis reveals to be virtually impossible to accomplish from below.

Also the topic of black holes offers strong evidence that gravity is generated from above and not from below. The fundamental characteristic of such celestial bodies is a gravity so intense that not even light can escape; therefore, and given that also gravity propagates at the speed of light, how could its effects escape black holes, if it were generated from below?

In a TV show, Michio Kaku first declares that the notion of gravity coming from below is not good and not correct; next he states that in Einstein's theory gravity comes from above, as it is a *push* given by curved space. But the curvature of space, since it is said to be caused by Earth, would have been generated from below. Therefore, I object to the statement made by Dr. Kaku. To earn the 'right' to assert that gravity comes from above, a theory must characterize it as being a work primarily of the universe, and not the celestial bodies.

On *Level 1 SInk-Flow Theories*

Theories that explain gravity as a consequence of the flow of a real something into the interior of celestial bodies are called sink-flow theories. Many times they have been developed independently, mainly by amateur scientists. My own work falls into the sink-flow category, however, with one distinction: a very remarkable evolution occurred when the notion was reached that what flows is constituted by filaments connected to the atoms, and not by loosen particles. Duly unified models for the most fundamental phenomena and concepts, all the way to what we call time, could be generated with relative ease. While it is true that I did not undertake extensive research, I am certain that there is no other work besides *Space Flow that has characterized the fluid in the same way. Thus, 'level 1 sink-flow theories' is how I am referring to those that characterize gravity as a sink-type flow, but do not characterize the fluid as consisting of filaments connected to the atoms.

The biggest problem with level 1 sink-flow theories is simply the fact that the notion of a fluid consisting of particles does not lend itself to the construction of satisfactory physical models [some correspondence with Einstein's "useless ether" statement]. It is not possible to satisfactorily model even the most basic in mechanics, which is the absence of drag allowing uniform motion, and acceleration under the action of gravity. [In some cases, however, amateur scientists strived to model various phenomena even in the presence of inconsistencies and contradictions, making their works not very pleasant to study.]

On H. Lindner's sink-flow theory

One author of a sink-flow theory stands out: H. Lindner is a medical doctor in the USA, a philosopher, and self-taught in physics. In a 2012 article [3], he presents a brief sink-flow theory, and in another article, published in 2015 [4], he defends the imperative need to include space in mechanics and physics in general. His work exceeds in the convincing power of some of its expositions and arguments, besides having the level of presentation associated with someone with complete academic formation, unlike most sink-flow authors (myself included).

Lindner's sink-flow theory attributes the acceleration of gravity to the communication to falling bodies of the acceleration that it is natural to expect the fluid to experience due to the convergence of the paths that take it into the interior of celestial bodies. The first problem with this notion is that the fluid would have not to offer any resistance to motion at a constant speed, no matter how high this speed is, while it would perfectly transmit to bodies its acceleration, no matter how small this acceleration happens to be, and this does not seem natural. Also, assuming that acceleration relative to the fluid involves forces, it would be expected that the motion of a massive body (or at least its acceleration) would provoke reactions in nearby bodies, because some disturbance in the fluid should occur. And to assume that the fluid would not be disturbed in any way by the acceleration of an object makes non-natural the reciprocal, the notion that the fluid would be capable of transmitting its own acceleration. Another problem, this one pointed out by Lindner himself, is that the acceleration of a fluid towards a space sink is not proportional to $\frac{1}{r^2}$, as it is seen in the case of gravity.

[Newton, when he thought about sink-flow, imagined the force (and therefore also the acceleration) transmitted by the fluid as proportional to its velocity, since this is proportional to $\frac{1}{r^2}$].

At the point considered by him as the most important of his sink-flow theory, Lindner offers the hypothesis that the gravitational redshift is related to the fluid velocity, and that the latter is equivalent to the escape velocity of the altitude considered. Based on these assumptions, he easily derives the same mathematical formula for gravitational redshift as TR. He points out that Einstein's theory contains the congruence between gravitational redshift and redshift in an inertial reference frame due to a speed equal to the escape velocity, but the famous theory does not offer explanations as to why, or what the meaning of this is.

Lindner did not attempt to model any phenomena – he could not do so properly without the notion of filaments with ends connected to the atoms –, nor did he offer any hypotheses even as to why a sink-like flow forms.

An important pattern can now be seen: the amateur ventures to trailblaze, but “can't do it right”, while the academic “can do it right”, but doesn't want to expose themselves to adventures. And that leaves the niche in which *Space Flow will surge.

*Space Flow – Universe’s Atlas of Anatomy

Mentioned several times before in this text, *Space Flow is my own work. The condition in which I produced it was that of a pure thinker, not even an amateur scientist, since it was only after the work was essentially complete that I began to undertake some basic studies on physics. If this is shocking, it shouldn't be for two reasons: it is known that this condition can favor creativity, and, when investigation takes place at the most fundamental level, previous studies have also some potential to hinder, not just help. Naturally, I only put the effort I did into the work because I believed the idea of sink-flow gravity was completely unheard of. This was partly due to some naivety of mine, and partly due to some evil present in the world of science, because it is unacceptable that absolutely nothing is divulged about this notion, given its power, and given that Isaac Newton contemplated it (furthermore, sink-flow is the only hypothesis ever offered as a mechanism for gravity: the ancients and Galileo did not offer any, while the TR presents only a pseudo-mechanism, as already exposed in this text). However, with the arrival of the notion of a fluid made up of filaments connected to atoms, the work moved to where I thought it had been all along, the field of the completely new.

With the recent addition of the third iteration of the model for gravity’s mechanism, the work now reveals, in a set of very simple illustrations, practically all the foundations of the universe, such as the nature of electromagnetic radiation – including what energy is –, as well as the mechanics of the universe, from the scale of objects to the scale of galaxies. It clearly shows how redshift effects occur, both gravitational and the one caused by speed in an inertial reference frame, as well as the congruence between the intensity of the gravitational redshift and that of a redshift generated in an inertial reference frame by a speed equal to the escape velocity.

[Lindner informs, in his 2012 article on sink-flow, that H. Ives has already demonstrated [8] that it suffices that a body is affected by the gravitational field exactly as it would be in an inertial reference frame in which it had a speed equal to the escape velocity, for that all effects of general relativity, including the precession of the perihelion of Mercury's orbit, are produced more simply].

The most recent model for the mechanism of gravity was formed simply by including the model for motion in general in the second model for the mechanism of gravity. These modules of the work have existed since at least 2016, seven years or more before I first came into contact with the concept of redshift and fundamentals of the theory of relativity and quantum mechanics. Thus, the significance of the correspondences it presents is big, as it was in no way shaped for this purpose.

In the portion preceding this third model for gravity, the work compulsively and uninhibitedly develops hypotheses. As this text is addressed to the physicists, in the following part of it I present the initial hypotheses as briefly as possible, and give more careful attention only to the latest models and its meanings.

***Space Flow on level 1**

The fluid was called *space, with the asterisk serving to differentiate the 'real-something space' from the 'inert-stage space'. It constitutes the only entity present in regions understood as empty, and its removal implies celestial bodies coming closer to one another. At the beginning of the work, it was understood to be made up of loose particles, and so it was not possible to model important phenomena satisfactorily. I recorded in the book clear explanations of the difficulties encountered, and this served as a guide later.

From the distancing of each other displayed by galaxies, came the conclusion that the fluid must be under pressure, and this led to the most important step that took place at this stage, the notion that the substance must flow into the interior of celestial bodies by the action of this intrinsic pressure, due to being processed with volume reduction by the atoms progressively until it becomes ordinary matter. The conclusions came that hydrogen, as it is the simplest and most abundant element, is the most likely to be synthesized, and that Earth's water must be produced by itself. Still based on the notion of conversion of *space into matter, a suggestion was made, that of all celestial bodies a correlation between mass and nature can be verified. As their masses grow, they obligatorily present themselves as: rocky without atmosphere, or rocky with atmosphere, or rocky with atmosphere and partially covered by oceans, or rocky with atmosphere and completely covered by oceans (super-earths), or massive bodies with abundant self-generated fluid phases (gas giants), or, finally, bodies of mega masses and mega fluid phases, where nuclear reactions take place (stars).

The mechanism for gravity, at this stage of the work, was the same as that offered by Lindner and described above: the fluid would communicate its acceleration, but would not offer resistance to motion at a constant speed.

***Space Flow on level 2**

When the investigation visited the subject of atoms, the notion was formed that the fluid is made up of filaments with both ends connected to them, and not loose particles. [Later, it was revealed that this notion of filaments could have been originated – and with more strength and clarity – from several other themes, which reinforces the view that the work develops the reverse engineering of an organism, and that it was blessed by luck in finding the most primordial notions in fact pertinent to the 'organism'].

The notion was reached that the energy of motion corresponds to a compression differential on the filaments located in opposite sides; this allowed the understanding of why the departure of a massive object does not affect other objects nearby, and the understanding of how rotary motion can be established. The property of having mass was characterized as the connections between atoms and filaments [connections between matter and *space – which explanation for the property of having mass (and inertia) could be more natural?].

The notion materialized that the so-called speed of light is the speed of filaments traveling between atoms. [This would help, further on, in the formation of the notion offered by the work for the nature of light].

Having promoted the evolution of the nature of *space from loose particles to connected filaments, the work should revisit the theme of a mechanism for gravity. Besides the flow having to be imagined as consisting of filaments, also falling objects had to be imagined accompanied by long appendages of filaments, and difficulties immediately arose. The model GII points to the flow interaction occurring with the filament appendages. This second model is clearly unsatisfactory, and this generated great discomfort. The combined notions of sink-flow, connected filaments and continuous creation (which had already joined in) were revealing all phenomena in the universe, while precisely for gravity, the theme that started the entire undertaking, a satisfactory model could not be achieved.

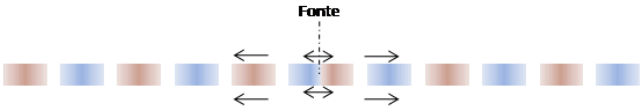
***Space Flow on level 3**

The quest for what gives rise to *space's intrinsic pressure took the investigation to the most fundamental level. First, came the realization that there is no actor in the known universe capable of such a feat, and a note in tone of resignation was recorded in the book. The second step took place when the work undertook a critique, in the light of logic exclusively, of the big bang theory. The creation of the universe really has to be understood as occurring out of nothing, as advocated in the BB theory, simply because there are no alternatives; however, to satisfy logical thinking, creation must be continuous in time and happen at infinite points simultaneously, *because nothing is exactly that which does not assume distinct states*. From these two considerations, the conclusion materialized that *space's pressure is due to continuous creation. Then, the work assumed that creation can only occur through dissociation (a notion whose inspiration came from current physics, from the theme of the simultaneous generation of particles and antiparticles), because this is the only form of creation that minimally satisfies logical thinking (accounting trueness). [The notion of continuous creation by dissociation was subsequently validated when revealed to be *phenomenally* useful in modeling universe phenomena.]

Electrons - The notion for the nature of electrons materialized while writing a note in tone of resignation about the investigation not having been successful in reaching them (the note was supposed to close the book at the end of its part 2). At the time, bearing in my mind that protons, neutrons, and all phenomena had been associated with the filaments of *space, but not electrons, I addressed a question to the reader: *"An active and detached particle, defiantly residing in nothingness... What can reside in nothingness?".* And wording the question this way made me realize the answer myself: *a source*, a point where creation through dissociation occurs. [Instead of ending, the work ventured into its third part].

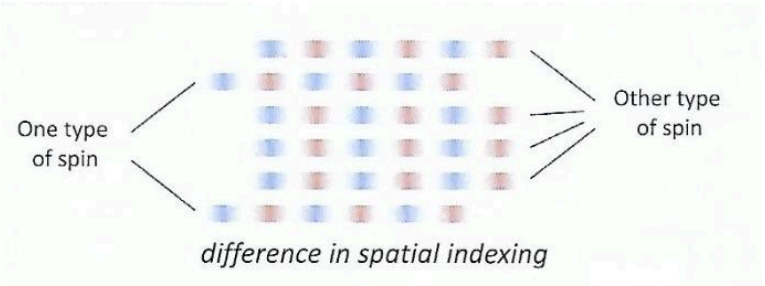
Nuclear forces - The topic on creation by dissociation added the notion of filament annihilation to the notion of filament fusion (which already existed since the work visited the atoms and concluded by processing with volume reduction). And these two processes were recognized as those responsible for generating the two nuclear forces: fusion generating the so-called weak force, and the annihilation of filaments generating the strong force. To the continuous creation, which generates *space pressure, it can only be opposed, causing forces to appear, processes that reduce pressure – and these are just the fusion and annihilation of filaments. And since, according to the work's models, the magnetic force is nothing more than the strong force outside the atomic environment, and the gravitational force results from an entire process that begins with the convergent flow of *space, the book suggests that the fundamental forces are two, not four. [The third model for gravity, that came to be recently, may have reclassified the force it involves as fundamental].

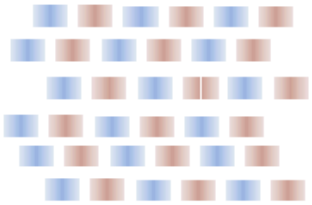
The nature of the filaments - The model underwent an evolution: the two components that are expected from dissociation, instead of being segregated each on one side of the filament, as in the illustration of the electron topic (the one reproduced above on this page), began to be understood alternating throughout it.



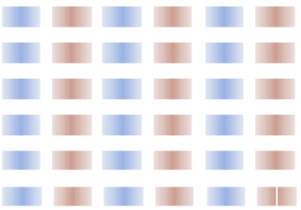
Magnetism - The last of 3 models offered for the phenomenon of magnetism is based on the notion of continuous emissions by electrons, and the notion of propulsion generated by these emissions. When two magnetic bodies are sufficiently close, a significant part of their emissions interact and annihilate each other, which leaves the emissions in the opposite direction no longer counterbalanced, and this gives rise to the forces that act to bring the bodies closer together.

Electrons' spin





less magnetic

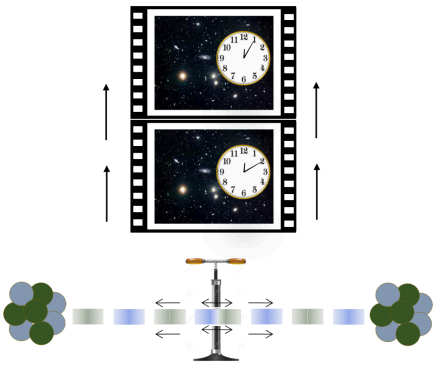


more magnetic

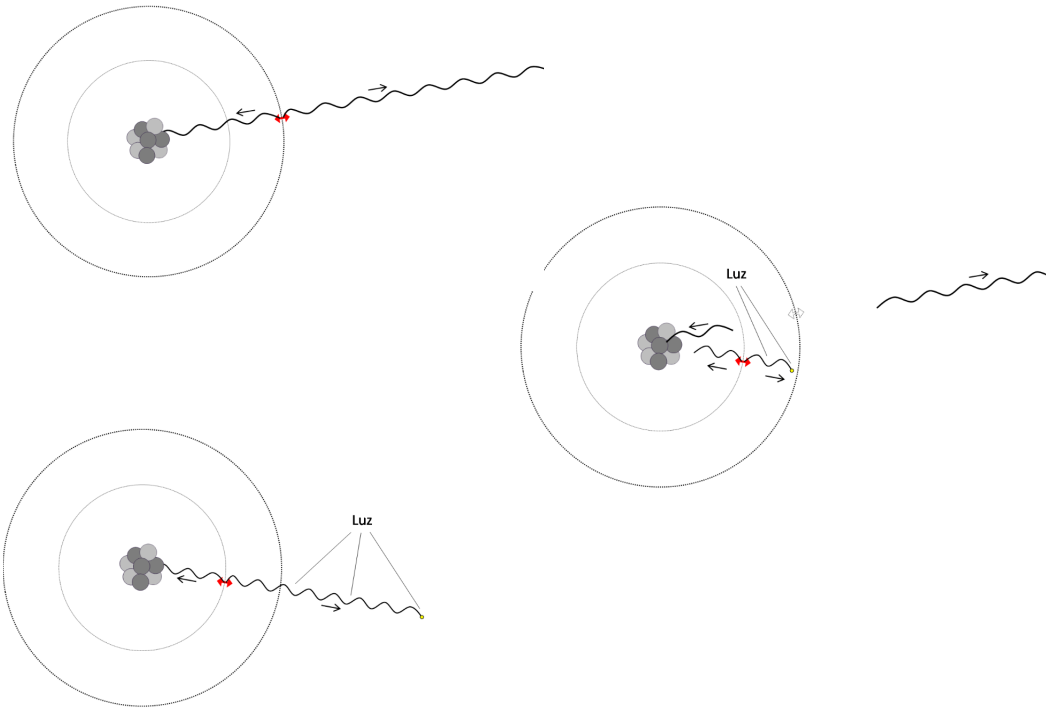
On the subject of electrons presenting a positive or a negative spin, what the work offers about the property is represented in the first figure above: a relation between phase and position in space. Note that in the above illustrations photons were used to describe the state of electrons. This makes sense when continuous emissions are assumed.

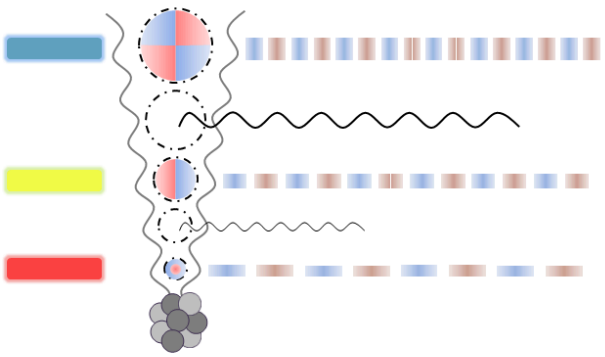
Energy - According to the work (which had already characterized the energy of motion as a pressure differential in the filaments of the moving body), energy in general is *space pressure, generated directly by the process of continuous creation. This model harmonizes perfectly with experience, which shows that energy only appears as radiation or some form of motion.

Time is the interpretation we make of continuous creation happening in every atom of the universe.



Nature of light - The characteristic of being generated when an electron changes its orbit, added to the fact that light does not pass through matter, as magnetic fields and neutrinos do, led to the model in which it is a filament with a free end, which gives it the tendency to connect to atomic nuclei. The model seems to harmonize perfectly with the known characteristics of light: a form of energy that behaves both as a wave (body of the filament) and as a particle (free end), and which can cause changes in energy levels in the electrosphere of the atoms it connects to.





In the illustration immediately above, one can see, as a bonus, a sketch for the mechanism by which pairs of electrons obligatorily have spins of opposite signs: inverse phase synchronization in the style of the pistons of a boxster engine. Perhaps in the future these electron *pairs* will be reclassified as a single entity.

When did the creation phase in the universe end?

Since it has at its core the idea of continuous creation, *Space Flow, naturally, refutes the big bang theory. Below, however, precisely it will be used to try to highlight how natural the idea of continuous creation really is.

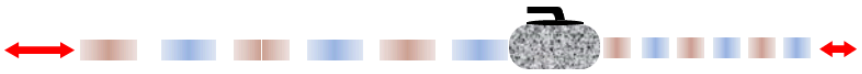
In current science, there is the belief that it is not possible to create matter or energy, creation would have occurred exclusively during the big bang. This means that two distinct states are recognized for the universe: the one that would have been in force during the big bang, and which allowed creation, and the current one, which does not allow. For how long was creation allowed, how long did the big bang last? At what moment (and why) did occur, in the entire universe, the transition from the state in which creation was permitted, to the current state? It is very significant that this information is not available in the big bang theory. And to suggest that creation spanned no time interval at all would imply the collapse of the theory; would mean that a theory about creation actually contains nothing about creation.

"10^{-37} seconds after the initial instant, the period of inflation began…" – It is very natural to think that this cosmic inflation, if it had occurred, would have been a consequence of creation, right? And why not understand that whatever happened, say, at 10 minutes after the initial instant was also due to creation? And whatever happened a thousand years after? And galaxies distancing from each other today, why not understand that it is still a phase of the big bang, and is happening because of ongoing creation?

What I want to offer is that it is very natural to think that 'things happening' are due to creation, and that there has always been a single state in the universe. It is very natural to think that everything that happens in the universe at this very moment – galaxies moving away from each other, planets orbiting, people thinking – is a consequence of creation, just as it is so natural to imagine this about the period close to the initial moments in the big bang theory.

The naturalness and strength of the idea of continuous creation can be extracted, through the exercise of philosophy, *even from a theory that advocates concentrated creation*.

Motion in general - In its second attempt to explain why the result of applying an impulse to a body is uniform motion, the work arrived at a model according to which motion, in general, is a directional imbalance in the continuous creation.



The relation that exists between motion and energy is explained, and the existence of a cosmic speed limit is explained: the highest speed a body can present is the speed of creation by dissociation, which is the filaments speed, known as the speed of light.

The model was born already presenting the notion of redshift, which I only realized recently, many years after its conception. The causal relationship is inverted: the radiation of a body does not become shifted because it moves, but rather the body moves because the continuous creation happening in it has become shifted. [The *perception* of the change in radiation must involve relativity, naturally].

As a curiosity, look at the sources connected to *space, and you may see ‘space-time’, besides it being a “fabric”.

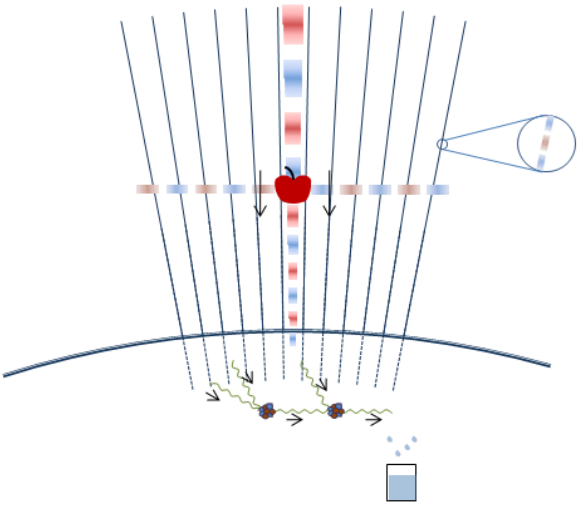
◊ The theory of relativity deals with motion, mechanics, while its origin was based on studies of phenomena related to electromagnetism. This strongly suggests that not only there must be a relationship between radiation and motion, but a *very deep* relationship between them. And see how well *Space Flow satisfies this requirement, when it offers that the cause of all motion is continuous radiation emissions. [Reminding that we are only able to directly perceive radiation when it has a free end]. Just as it was with the redshift topic, I only realized this recently, about 8 years after the model for motion in general was conceived.

◊ The notion that falling bodies convert potential energy that was stored in their own atoms, and the notion that a body's state of uniform motion is due to the storage of kinetic energy in itself, mean that physics already treats motion as due to the bodies themselves, simply offering a different interpretation than the one presented here.

◊ The model for motion presented here shares similarities with the idea of *impetus*, as offered by Buridan. In his book, Prof. Antônio Teixeira declares, without providing justifications, that the idea is not correct. It may present small problems in one detail or another, but the essence of the idea of the *impetus* cannot be declared incorrect by those who advocate the notion of kinetic energy, because one and the other are almost indistinguishable – one can see a convertibility between *impetus* and kinetic energy, if only one wants to. The medieval idea would be much more useful if it included some mechanism, but it is not incorrect.

Gravity III (*Space Flow's third iteration of the model for its mechanism)

In the illustration to the side, the flow towards Earth's interior does not cause drag. The dropped body accelerates towards the center of the planet because the density gradient (of *space) generated by the convergence of the flow unbalances continuous creation in the vertical direction. The glass with water is a cartoonish piece: the work advocates only the *space into matter conversion, and points out that hydrogen synthesis is the most natural to expect.



The intensity of the effect in the present model is appropriately proportional to $\frac{1}{r^2}$: a fixed quantity of filaments distributed over spherical surfaces, whose areas vary with the squares of the radii associated with them. The situation is identical to that of the decay of the intensity of a light source with the distance. The two previous models of the work did not present intensities proportional to $\frac{1}{r^2}$, but I wasn't even aware of it, and simply marched on with the reverse engineering of the organism.

The saying of J. Archibald Wheeler – *"Spacetime tells matter how to move, matter tells spacetime how to curve"* – can be seen perfectly in the GIII model: *space density gradients affect continuous creation, thus telling bodies how to move; and celestial bodies – matter –, through the connections their atoms make with the atoms of other celestial bodies, generate the density gradients, thus dictating the characteristics of *space. To top it off, time is how we call (the) continuous creation (of filaments). [To me, it seems that the presence of a description for what we call time, and the characteristic of motion being a result of continuous creation in place of the idea of potential energy conversion, are indispensable so that a model harmonizes *perfectly* with Wheeler's words. Therefore, the model presented here represents the saying better than the general theory of relativity, which inspired it].

GIII-model origin

The model came about while reflecting on the mechanics of the universe at all scales. The sink-type flows, that characterize sink-flow theories, require, in contraposition, the notion of sources [*], and at the beginning I imagined them to be located in space. Even after realizing the nature of sources in electrons, I continued to expect the existence of *main sources*, located in space (the sources externally positioned to the objects, still present in the illustrations of the topics about time and motion, are reflections of such belief, alive by then). The task of conceiving a model for the distribution of sources throughout space, which reflected the mechanics of the universe at different scales, I felt was beyond my capacity (I wanted the help/participation of physicists) when the development of the work paused completely, in 2016. Already in 2024, I casually realized that the few reflections on the subject did not involve the model for motion in general. Including the notion that all motion is due to continuous creation seemed, at first, to make the task of modeling the mechanics of the universe 'more impossible'. But the idea suggests abandoning the notion of drag by the gravitational flow, and that was how the Gravity III model came about. [With the idea of main sources in space also abandoned, everything related to the mechanics of the universe would fall into place as if by magic.].
[* Although the notion of sources practically imply the idea of continuous creation, almost all sink-flow theories do not involve it openly. The topic is unpleasant for the human mind, it is a scientific taboo (and there can be no taboos in science).]

Gravitational redshift in the GIII model, and its congruence with the redshift by escape-velocity in an inertial frame

To each altitude corresponds a different density of *space, and that implies an associated degree of compression in the radiation emitted by continuous creation. This means that the redshift effect was already present in the model at its conception, and with the attribution of *the causing factor* for the acceleration of falling bodies.

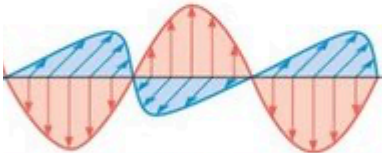
And sufficing that a redshift effect due to gravitational fields in a sink-flow type model exists, the congruence between its intensity and that produced in an inertial reference frame by the escape velocity for the altitude will be assumed automatically, because it is only natural to understand that the factors that affect the radiation are exactly the same that will act to decelerate the body that is launched vertically. As in Lindner's sink-flow theory, in which he does not feel the need to present justifications when he assumes that the speed of the fluid (towards Earth’s interior) at a given altitude is the lowest speed that should be imparted to a body in the opposite direction, if it is intended that it escape from the gravitational pull. Within the doctrine of *Space Flow, because the work characterizes the alterations in radiation emissions as the cause of all motion, there is not even the need to translate redshift effects into speeds, one can directly say: *the intensity of the redshift* verified at a given altitude *is the same as that* which must be applied to a body in the opposite direction, if it is intended that its speed will only cancel out at infinity.

Correspondence that the *Space Flow model for the nature of light presents with Maxwell's graph, and with Planck's equation E = hυ

Sine waves characteristics can be seen in the *Space Flow filaments:

[*In the work, filaments and light are distinguished only by the presence, or not, of a free end.]

About 3 years after conceiving the model for the filaments, I noticed the similarity between it and Maxwell's graph for electromagnetic radiation:

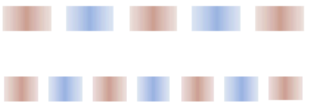


With the arrangement of two sine waves, Maxwell accurately represented filaments with alternating sections. He also represented continuous creation by dissociation, lacking only the interpretation. The two waves reach zero simultaneously, and this should mean the end of both. Why would they form again? Momentum stored in a third participant that does not exist? The two waves reaching peak intensity and zero value at the same time means continuous creation, and, even more, continuous creation by dissociation. Light is created and recreated throughout its entire path (reason why it does not lose speed or intensity).

In both the *Space Flow model and the Maxwell graph, light has a length, but only *Space Flow tells us which it is: the filament is as long as the distance between the atom that generates it and the free end, or as long as the two atoms it already connects are apart from each other.

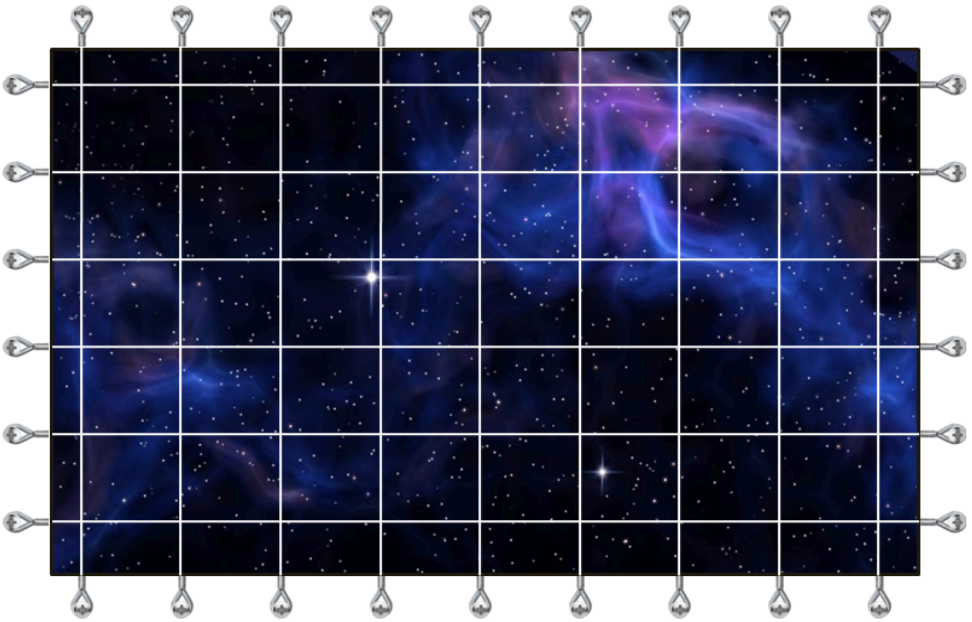
◊ The notion of *"waves capable of propagating in a vacuum"* means continuous creation by dissociation and filaments, the only thing missing is the interpretation.

E = hν - As mentioned before, energy, according to the work, is *space pressure / pressure in the filaments, generated directly from continuous creation. Thus, more energy can be seen in the bottom filament of the illustration to the side, when compared to the top filament, either directly due to the presence of a greater number of sections, or due to the fact that more sections suggest greater pressure. More than simply harmonizing with Planck's equation E = hν, the model reveals *why* the energy of a photon is proportional to its frequency.



***Rotating bucket*, the most important experiment (and which has not yet been put to its best use)**
Space structure
Inertia

When Newton says the curvature noticed in the water that rotates inside the bucket is due to an interaction between it and space, he can only be *correct,* simply because nothing material touches the water. The issue is the difficulty in conceiving the structure of this space. Perhaps the biggest problem with the concept of absolute space is its name, which leads to the conception of something similar to the image below: an immobile, homogeneous entity anchored in a way that leaves it independent from the rest of the universe. Had it been named 'real-something space', instead of absolute space, its mechanical interaction with material bodies might have been easier to accept.



Given its fluid and ethereal nature, the first requirement that space is expected to meet, in order for it to exhibit mechanical properties, is to be anchored to something that has mechanical properties. And to Mach's satisfaction, space can only be anchored to the masses of the universe (*), because there are no alternatives. And this characteristic requires space to be constituted by something like 'rods', capable of transmitting forces between anchor points – the notion of a space constituted by loose particles cannot satisfy the requirement. So, the rotating bucket experiment could already, 400 years ago, have led to the conception of a space constituted by filaments interconnecting masses, sufficing that there had been faith that later on a solution would be provided to the question of how filaments capable of transmitting forces between distant points allow the transit of objects through them.

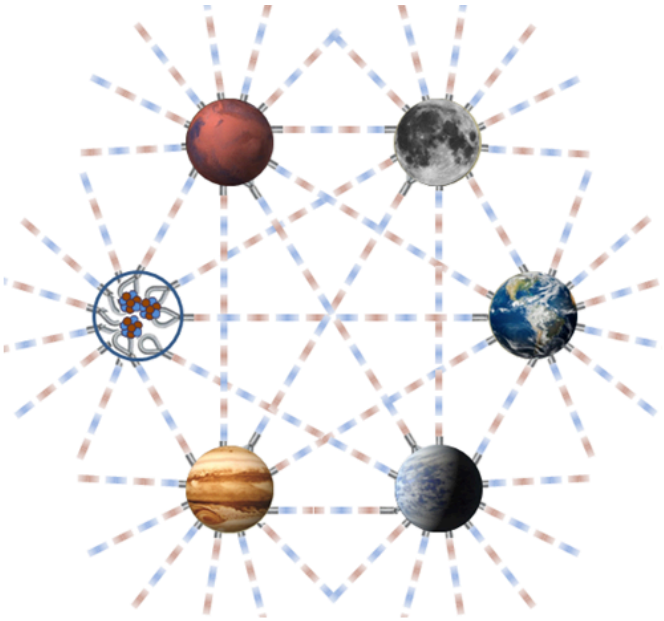
(* This anchoring to celestial bodies already implies that space is heterogeneous, mobile and compressible.)

◊ Philosophically, Einstein's inert stage space is worse than Newton's absolute space. Simply to not collapse, and thus serve as a stage, such a space demands for its design all the requirements that were listed in the case of absolute space: be an immobile, homogeneous, and rigidly anchored entity, so as to be independent of the rest of the universe. And because the inert stage space would present mechanical properties 'in relation to itself', while it would not relate mechanically to material bodies, its idea is less natural than that of absolute space.

The belief in the homogeneity of space, present in the cosmological principle, implies the belief in the inert stage space, understood here as one of the worst ideas that can be defended. An opinion that I formed more than 10 years ago remains unassailable in my mind: the single greatest favor one can do for physics is to promote the evolution of the concept of space.

◊ We must agree with Mach when he says that the behavior of the water inside the rotating bucket will change to some degree if we are capable of making its walls many kilometers thick, and we must also agree with him when he says that the inertia of an object can only be related to the mass of the Earth and that of distant celestial bodies. But when Mach says absolute space is just a figment of Newton's imagination, he completely deviates from reason. The water inside the bucket has no contact with distant celestial bodies, the communication of their influence demands the involvement of space. Mach should have used his considerations to *shape and evolve* Newton's absolute space, not to deny it. Absolute space as a fixed reference for the motion of everything in the universe is a figment of imagination, but absolute space as an actor in mechanics is a product of reason.

Applying five refinements to the sketch of the space structure that could already be generated by considerations about the rotating bucket, we arrive at the current *Space Flow model for the structure of space. The refinements are: filaments in a quantity proportional to the number of subatomic particles, and anchored to them; compressible filaments, which are, in their essence, electromagnetic radiation, and, finally, filaments animated by continuous creation, with its sections traveling between atoms.



*Space Flow model for the structure of *space. Imagination can provide improvements to the illustration above, such as: number of filaments associated with each celestial body proportional to their masses, and number of connections made with other bodies depending on the masses of the latter and the distances at which they are located.*

◊ Isn't the space that is conceived based on the notion of quantum foam very similar to the one offered here? The alternating sections on the filaments are equivalent to the notion of particles and antiparticles appearing and disappearing. [*The question is sincere, I don't pretend to know the subject of quantum foam.]

◊ Descartes wrote something very like: "Space is an extension of bodies, ceasing to exist in their absence". If we bear in mind the imponderable ‘nothing-space’, the statement may even sound crazy, distanced from reality. However, it is enough to have in mind the space offered by *Space Flow, and modify the section "ceasing to exist in their absence" to "getting equally removed when they are removed" for Descartes' statement to be *perfect.* It is much preferable that philosophy, mechanicism and theoretical physics move in step; one branch should not go too far ahead of the other two.

Inertia

The rotating bucket experiment, the twins paradox, and also the mystery of the reference to which gyroscopes attach in their essence refer to the question of the origin of inertia, which remains unanswered in current theories.

Whichever the nature of space was, it is not logical that a body uncoupled from everything else present inertia. *The property requires the notion of interconnections*. It is the connections that bodies – whether they are objects or celestial bodies – do with other distant masses that (in addition to, firstly, constituting *space) explain the existence of inertia.

And it was exactly like this, interconnected, that *Space Flow presented atoms, *before* ever visiting the theme of inertia. [In the book it was suggested that the energy of motion should not be related to variations in the state of the atoms themselves, but only to variations in the state of the filaments, their degree of compression. At present, I no longer rule out the possibility that the energy of motion is, or also is, related to some state of the atoms themselves, their electrospheres].

◊ Einstein declared that, except for the gravitational and electromagnetic fields, which in it *take place*, space is "absolutely nothing", and was partially successful in describing the mechanics of the universe under this conjecture. In other words, he gave a description of the mechanics of the universe considering only the fields, and leaving aside space. Note how the space offered by *Space Flow, constituted by electromagnetic radiation itself, harmonizes with the approach/experience of only fields having active roles. And it does this while being infinitely superior, philosophically, to the 'nothing-space filled by fields".

In less words:

Space has to be something, but it is impossible to conceive proper models assuming a fluid made up of independent units – the answer is space constituted by connected filaments.

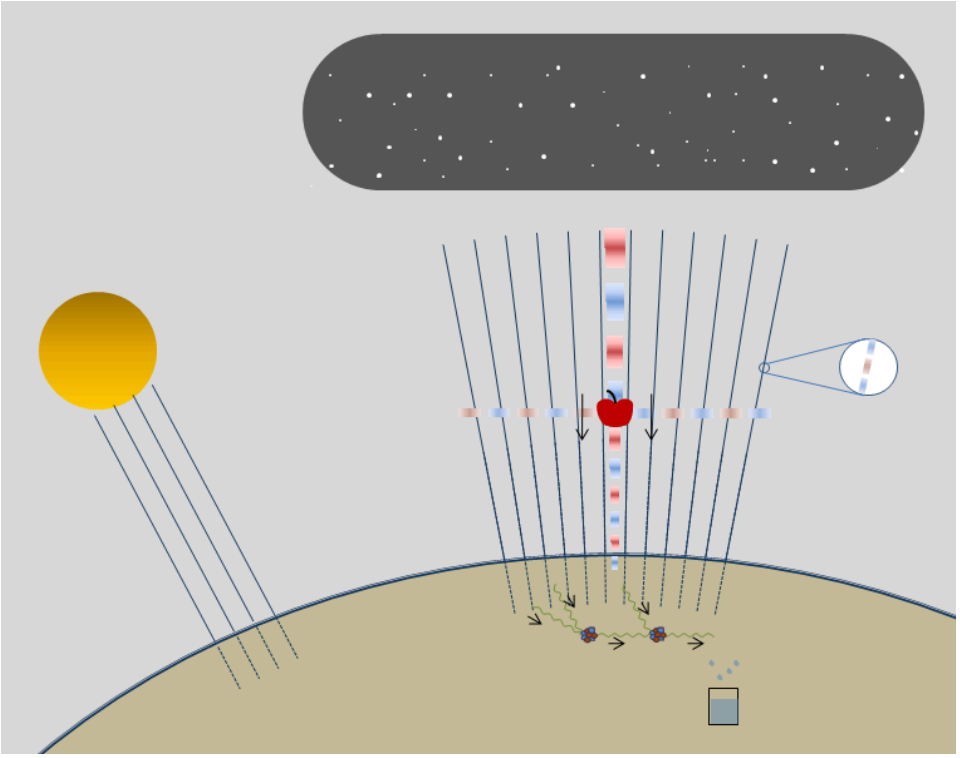
Space can't be nothing, yet motion in outer space unfolds exactly as if bodies were floating in nothingness, influenced only by the presence of other masses – the only answer possible (and natural, actually) is space constituted by connected filaments.

Universe mechanics – from planetary systems to galaxies
Dark energy and Dark matter revealed on the *Space Flow models

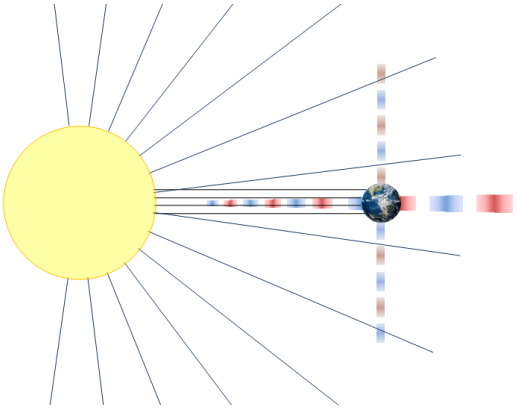
Dark Energy

Due to the proximity between Earth and Sun, the number of filament connections between them can only be many times greater than the number of connections Earth has with each distant celestial body. However, the work assumes that the Sun's passage high in the sky does not affect the gravitational effect felt at a point directly below, because the filaments that constitute the connections between Earth and Sun are parallel to each other (like the light rays that arrive here coming from the Sun), and, thus, do not modify the density gradient of *space.

The passage of the Sun high in the sky possibly causes other mechanical effects besides its own gravitational attraction in the opposite direction to that of Earth, but this issue does not receive the attention of the work at the moment. *What *Space Flow offers is that these connections between celestial bodies play a leading role in the mechanics of the universe on a large scale. They exert repulsion, and this is what is behind the effects that today are attributed to "dark energy".*

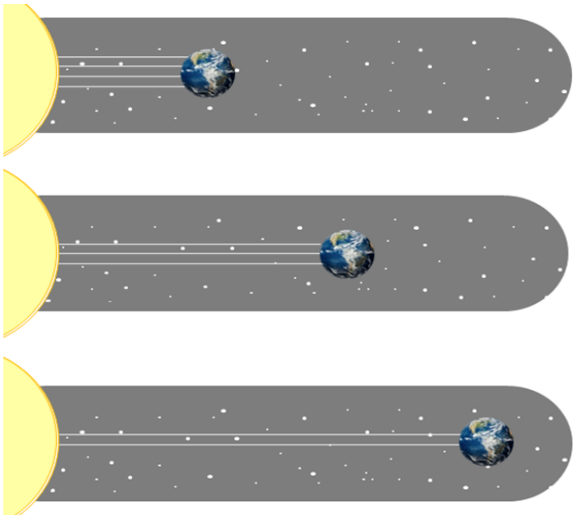


Complete illustration of the Gravity III model

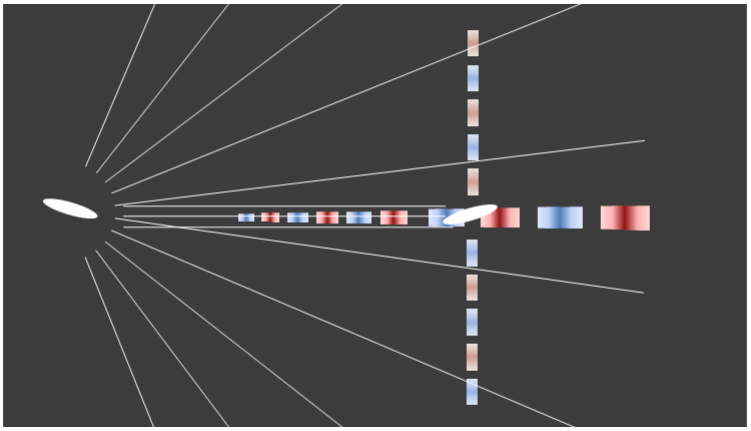


In the above illustration, Earth is orbiting the Sun. Just as in the case of falling objects, the continuous creation promoted by Earth's mass is affected by the density gradient of *space caused by the Sun, and propels Earth towards it. The filament connections between the two bodies (which were not worthy of highlighting in the Earth-objects case), exert a force in the opposite direction, in the sense of pushing them apart, due to their intrinsic pressure.

It is very natural to expect, in the case of planets in densely populated regions of the galaxy, that the number of connections between two celestial bodies is proportional to their masses, and proportional to the ratio between the area that the star occupies on the celestial sphere with a radius equal to the distance between them, and the total area of that sphere. This is what I sought to represent in the illustration below:



The considerations in the above paragraph are equivalent to saying that the number of connections must be proportional to the product of the masses, and inversely proportional to the square of the distance, as in the case of gravitational attraction. For this reason, small-scale observations are not capable of revealing the existence of this factor exerting repulsive force. In other words, the effects attributed to dark energy are not noticeable in small-scale scenarios / in densely populated intragalactic spaces.



Two gravitationally intertwined galaxies

In the case of galaxies, the intensity of the gravitational effect continues to decrease with the square of the distance, but, unlike what happens in the case of planetary systems, the number of direct connections (as well as the repulsion force to which they give rise) must decay less quickly with distance, due to the greater average distance between galaxies in space, when compared to the average distance between stars within a galaxy.

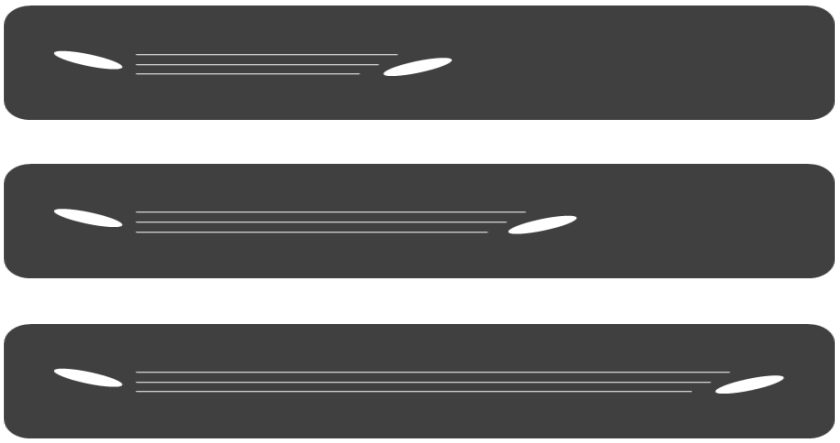
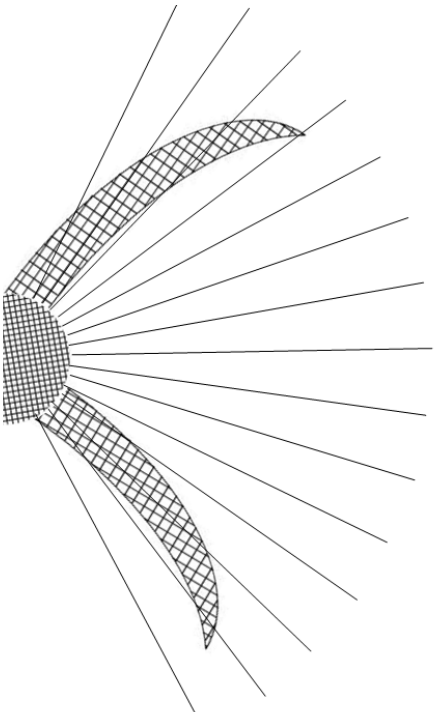


Illustration above: the number of direct connections between galaxies is assumed to be much less affected by the distance between them, when compared to the situation experienced by planets in intragalactic environments. The difference between the illustration above and the one on the previous page is the significant presence of other elements in the background. In the first one, they can replace the planet as the destination for connections, and they generate a mesh of filaments that constitutes a much denser and more regular structure for intragalactic space.

And if the number of direct connections is not very much affected by the distance between two galaxies, while gravitational attraction is, past a certain distance they will repel each other.

So, that's what is behind the notion of dark energy: direct connections exerting repulsion, and non-regular structure of *space.

Dark Matter



In the illustration on the side, any spiral galaxy. The grid fillings, in the center and in the arms, represent only *space density, not structure, which the work assumes is irregular and not gridded. The region between the arms is the object whose representation is intended by the illustration. In it, the radially positioned filaments seek to represent the density and, in this case, also the structure of *space.

The doctrine of *Space Flow makes us believe that the speed of a body moving through *space must be related to the number of filaments crossed (in *space, the usual distance units do not seem to be appropriate); Thus, the period of a celestial body in orbit around a galaxy, in a region far from its center and far from the spiral arms, will practically not be a function of the distance to the center / orbital radius, but a function only of the mass of the galaxy, which determines the number of filaments that will be crossed in each orbital cycle.

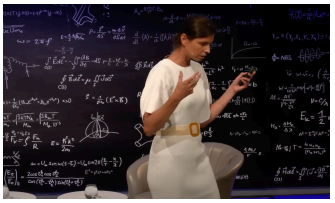
The discrepancies between observation and theory, verified in the motion of certain celestial bodies, and which today make most scientists believe in the existence of dark matter, in the work *Space Flow are all explained by the structure of *space. The orbital speeds much greater than those predicted by Kepler's law, exhibited by celestial bodies orbiting regions further away from the centers of galaxies, and also, in these same regions, the almost equivalence of the orbital period exhibited by celestial bodies with different orbital radii, correspond perfectly to what is expected by the structure of *space offered in the illustration above.

The finding that the larger the scale of observation, the greater the expected ratio between dark matter and ordinary matter, corresponds perfectly to the fact that, according to *Space Flow models, the larger the scale, the lower the density of *space and the regularity of its structure.

On gravity's reach

The fact that we can see distant galaxies supports the conclusion that there are no limits to how long a connection between celestial bodies can be. However, there is clearly a limitation on the number of connections a celestial body can make, since the number of atoms that make it up is finite. Thus, unlike what is considered today, the reach of gravity of a celestial body is finite, with only the aspect of the length of the connections it can make being infinite.

In the video from which the image to the side was taken, Cláudia de Rham tells us how her attempt to model the effects currently attributed to dark energy, as a "vacuum energy", is resulting in an error in the order of 10^{26}. She also tells us how she intends to introduce the hypothesis that the reach of gravity is not infinite, in order to improve the model and the approximation of the numerical results. See how, according to *Space Flow, her considerations are perfectly coherent, and yet she is so hopelessly far from success.



The finite reach of gravity cannot be expressed simply as some function of the distance, because space structure is irregular, and the connections celestial bodies make depend on their surroundings. Celestial bodies at the center, and celestial bodies at the edges of a galaxy, will produce distinct gravitational effects on neighboring galaxies (the introduction of new celestial bodies to the center of a galaxy may cause a change in its nature without practically causing a gravitational effect on neighboring galaxies).

The hypotheses Dr. Rham needs to introduce, to be successful in her endeavor focused on dark energy, are the models from *Space Flow: the nature of *space, gravity's mechanism, the model for dark energy, etc.

In the appendix of the present text, a model for the wave function collapse will be offered. It will show that the harmony between *Space Flow core ideas – atoms interconnected by filaments with alternating sections, and continuous creation – and quantum mechanics is *perfect*. Thus, if a theoretical physics work is successful in generating mathematical models for the universe's large scale mechanics using *Space Flow models (ousting dark energy and dark matter ideas), that will signify the unification of large and small scales so sought after in the last 100 years.

Gravity did have a choice

This frame is a continuation of the almost homonymous frame present on the first page.

Gravity had a choice, and the choice it made, which resulted in all bodies showing the same acceleration rate, constitutes evidence that bodies move by their own means.

The alternative that was passed over by gravity would involve energy. If energy was transferred during accelerations due to gravity – whether the energy had origin in the celestial bodies or in the gravitational field – it would be natural to assume that the transfer rate would not be infinite; thus, heavy bodies would accelerate more slowly than light ones. And an argument analogous to that used by Galileo would not end up in a contradiction in this case: a light body would fall more quickly, but its coupling to a heavy body would not increase the rate of fall of the latter, it would rather decrease it (naturally) because the higher weight of the whole would require a greater rate of energy transfer to maintain the same acceleration.

Motion by own means when accelerating under gravity

If, as the evidence given above shows, there is no energy transfer during a fall due to gravity, we must conclude that, at least in such a situation, bodies move by their own means. And both *Space Flow and current physics already understand it this way; the difference is only in the origin attributed to the energy involved in the acceleration of falling bodies: stored inside themselves, according to current science, or new, generated on the spot, according to *Space Flow.

Following, I list two selected arguments against the notion of energy stored in atoms. 1) As we have already identified mass in individual subatomic particles (also in the electrons), it would be necessary to admit an accumulation and dispensing (*direction-oriented dispensing*) of potential energy by each one of them, and not by the entire atom, which complicates a matter that already wasn't simple. 2) And when you imagine that a body loose in outer space could be attracted by a small asteroid, and gain little speed until it collides and settles, or be attracted by a distant black hole, and approach the speed of light before colliding against it, It gets very difficult, from a philosophical point of view, to believe that there is potential energy stored within the atoms themselves.

It remains to try and demonstrate, in favor of *Space Flow, that the energy involved in the falling of bodies is new.

There is a scenario in which it is possible to ascertain the presence of new energy in processes that involve acceleration due to gravity

When a test body is accelerated across a flat surface, the amounts of energy required are directly proportional to the desired speed increments. However, and remarkably, the test body can *gain height in proportion to the square of the speed* it presents. If, after having its speed converted into height using a curved ramp, the body returns freely to the initial plane, no abnormalities will be noticed. However, nothing exists that can prevent us from, at the highest point, coupling the test body to a Joule-Machine like device, and make it descend at a constant speed while its *height is converted into energy in direct proportion*. In the latter case, discrepancies will be noticed between the amounts of energy needed to accelerate on the plane, and the amounts of energy that can be recovered during the descents. At the end of the analysis, the existence of these discrepancies will demand the conclusion that there is new energy involved in descents under the action of gravity.

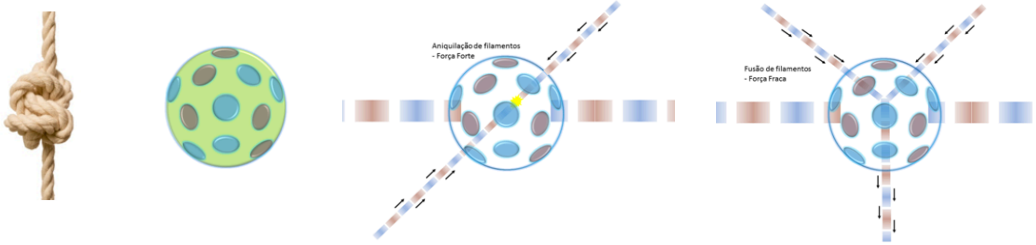
Appendix - Perfect harmony between *Space Flow and the wave function collapse

In his book on the evolution of ideas in physics, Professor Antônio Teixeira wrote "there is nothing about the collapse of the wave function". *Space Flow has content to offer on the topic, and the meaning of such a contribution will exceed that of a simple model: _The experiments and everything else involved in the question of wave function collapse seem to have been custom designed to endorse the core of the work, which is the ideas of atoms interconnected by filaments, and continuous creation by dissociation.

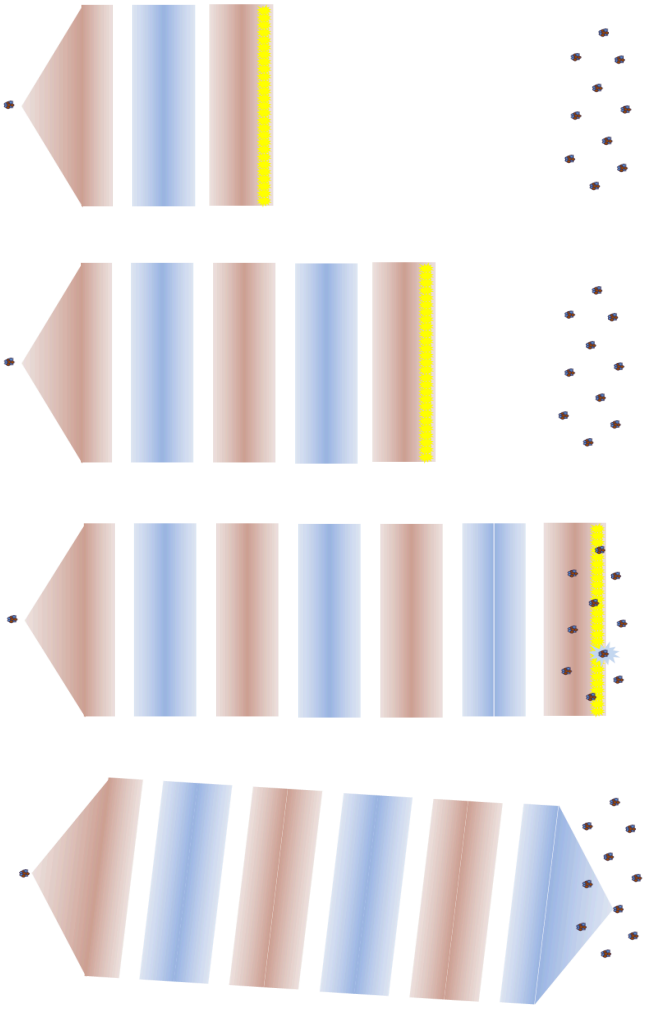
First, the work offered that atoms are interconnected:

Later, it characterized the filaments as consisting of alternating sections:

With the emergence of the notion of alternating sections, the model for protons also evolved. They, which had already been characterized as 'confluences'/'junctions', gained poles, which justified the coupling of the filaments:



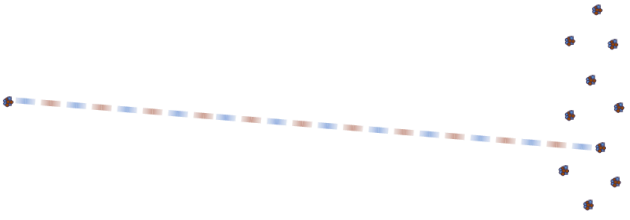
And all that is missing, for the above characterizations to perfectly explain what is behind the wave function collapse, is to remember that the typical ratio between the size of an atomic nucleus and the size of its electrosphere resembles the ratio between the sizes of "a small ant and a soccer stadium", and not the ratio used in the second figure above.



Sequence of figures above: A photon – a filament with a free end – is emitted by the atom on the left and moves towards the detector, on the right. The ratio between the diameters (filament-core) was changed in the sense of getting closer to the real proportion, but just enough to allow the idea to be communicated. The yellow band symbolizes that the free end is 'reactive' / has the property of establishing connections. In the last two figures above, the connection between the photon and the nucleus of a single atom in the detector takes place. The question of which atom in the detector will receive the connection is probabilistic.

Of the four situations represented above, we are able to detect only the one represented in the third figure, the initial moment of the connection.

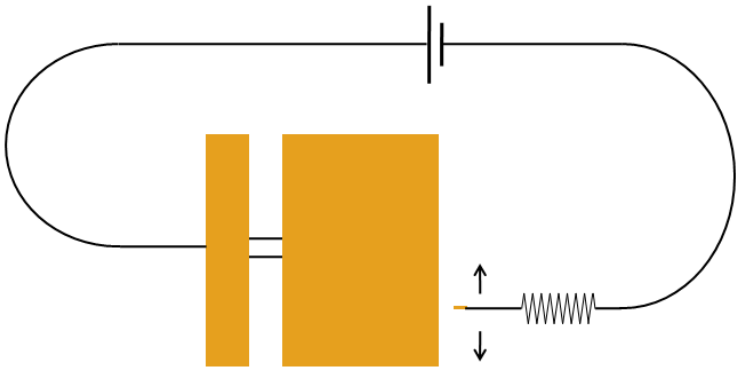
Below, a repetition of the fourth figure, with the filament represented narrow as usual, to better highlight the connection formed between the atoms.



It is said that light exhibits dual behavior – sometimes wave-like, sometimes particle-like. From the *Space Flow point of view, the photon is *never* a particle, it is always a wave (singular in nature), which eventually *connects*. The singularity of the connection point is largely responsible for the particle-like character we perceive in photons.

When it is said, about the double slit experiment, that the photon/electron "crosses both slits at the same time", "is found everywhere at the same time until we decide to look [*] at it", it is exactly this what happens, according to *Space Flow. Only it is not a "probabilities cloud", and no conversion into particle takes place. Furthermore, the wave continues to exist after the connection, with its origin at a given atom, and its destination at another – only the free end ceases to exist. And if we no longer detect the wave/photon after its connection has occurred, this is because already connected filaments constitute what we call space. [* Every way of 'looking' at a photon involves promoting its connection to an atom in some kind of detector.]

◊ I have recently come to believe that the photon's connection is more likely to happen first with the electrosphere of the second atom. The content of this section still reflects the old position, of considering that the photon's connection would occur directly with a proton.



Above, an analogy to the wave function collapse, using copper conductors. In the represented device, the thin conductor can be moved randomly and close the electrical circuit at any point on the conductor with the largest section. *The point of connection is not a particle that travels like an electric field that collapses (although it almost perfectly resembles this description), and the electric field does not completely cease to exist after the connection is established.*

Bodies with appreciable mass exhibit a *deterministic* mechanical behavior, being themselves made up of particles that, in turn, exhibit a *probabilistic* behavior. This raises the very interesting question of where lies the boundary between probabilistic and deterministic. The model now presented contains a very clear answer to this question. The border between probabilistic and deterministic must be related to the *ratio between existing connections and connections to occur* in the object under study. Thus, if the object under study is a single photon/electron, its behavior will be exclusively probabilistic; if the object under study has appreciable mass, its behavior will be exclusively deterministic, and if it is made up of a very small number of atoms, and the experiment involve loss or gain of connections, it will be natural if atypical behavior is observed.

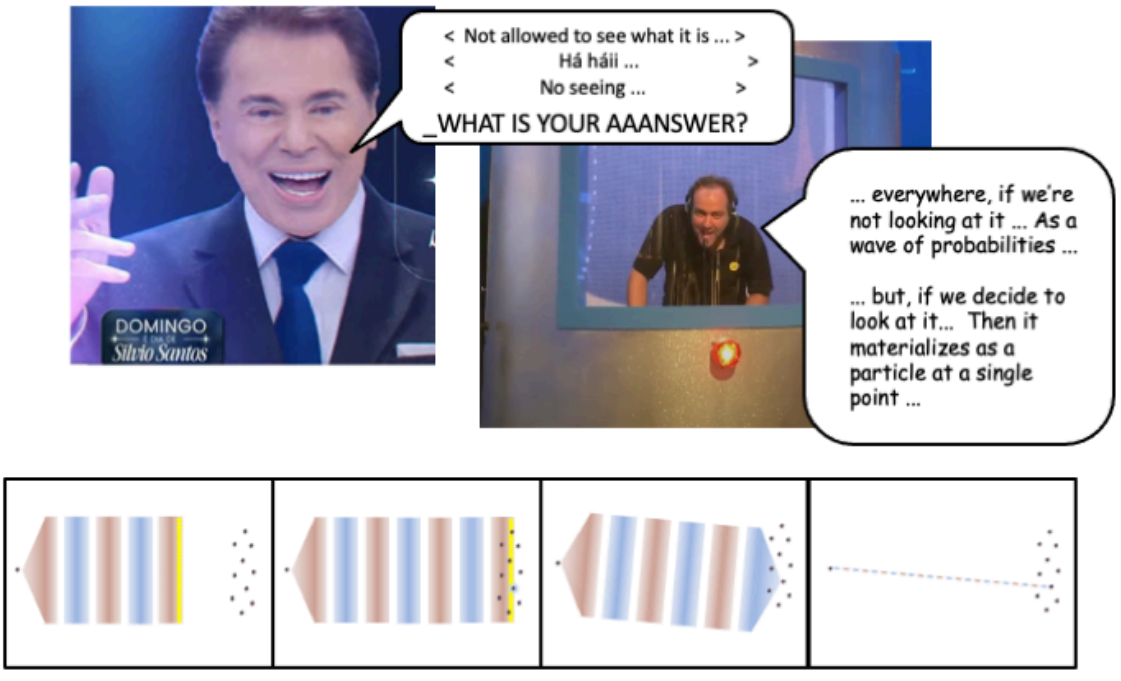
◊ In the beginning of this section, I used the ratio between electrosferes and nuclei as the reason for the dispersion of the radiation. The core of the model for the wave collapse was not compromised, but now I think this detail is not correct. Radiation must disperse as a sphere, because that is more natural, and because that is suggested by radio transmissions and also by the double slit experiment itself. The only problem that arises is that, like a sphere, radiation doesn't seem to be able to travel the long distances it does in space. The hypothesis that pleases me is that a natural collapse can occur not very far away from the point of emission (even if for not all photons), and long distance propagation would happen only in the form of filaments.

Doing a little bit of promotion for *Space Flow

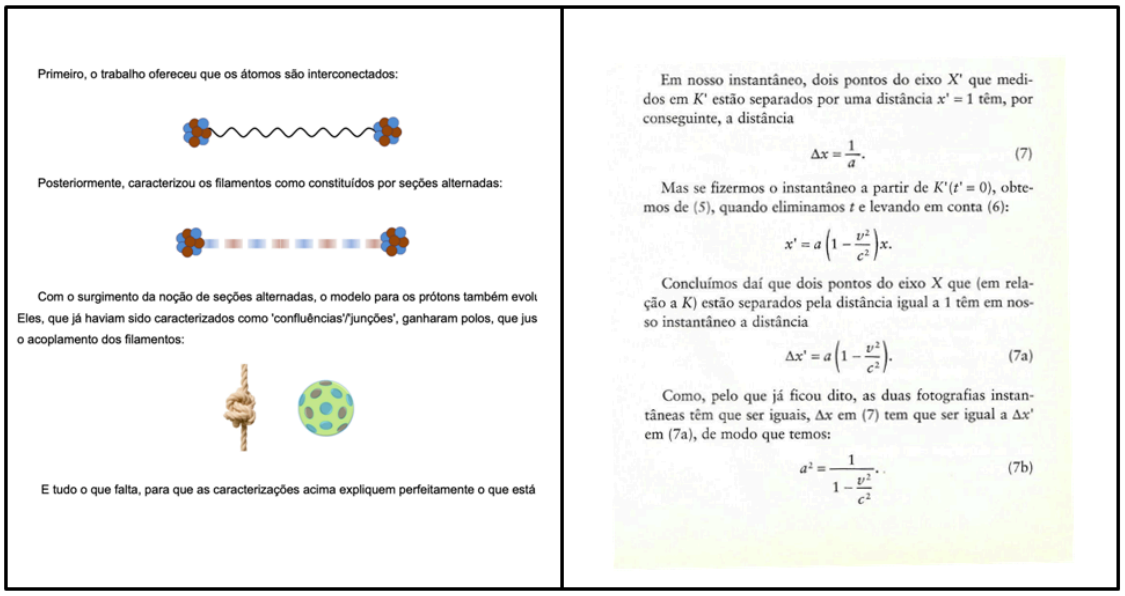
Such a satisfactory correspondence between experience and model, precisely in the most primordial environment (in which everything else has its origin), and which is where, in fact, “the most successful theory of theoretical physics” was born, can only be something very significant.

Is this model unrelated to reality, and just the product of an inventive imagination? To contextualize this question, let's imagine a competition, in which creative university students from all over the world (hundreds of thousands) are asked to try and create a mechanistic model for the wave function collapse, *without restricting their imagination*. What are the chances of a coherent model emerging… The requirements are continuous creation by dissociation pulverized down to the atomic level, the connection between atoms, and the concept of space as something real constituted by the filaments that connect the atoms. And I didn't even look for this model – Having read about the wave function collapse, I thought about the work, and… *the answer was simply already there*, constituted by the same elements that explain so many other foundations of the universe.

I recently heard that physics recognizes a philosophical proximity between time and energy, and between space and linear momentum. I immediately remembered that, according to the work, energy is how we perceive the pressure intrinsic to continuous creation, while time is what we call continuous creation itself; and I remembered that the work offers that space is a real something, made up of already connected filaments, while linear momentum is a compression differential on filaments attached on opposite sides of bodies. Isn't it indeed a work blessed by luck? [Also recently, I heard that searching for symmetries is one of the methods of theoretical physics. It seems to me that looking for symmetries is trying to advance in philosophy by doing theoretical physics instead of philosophy itself. And all of this endorses the opinion that the limiting factor for the advancement of knowledge today is the philosophical basis of physics.]



*Perfect harmony between the core of *Space Flow and the wave function collapse*



Long live the difference

Let me repeat here a true story, which I saw on The History Channel a long time ago. A copper mine needed a road for cargo trucks through a very steep and rugged mountain, to make it possible to explore a deposit. The administration contacted the best engineering companies in the world, but one after another they said it was impossible to build such a road there. The mine owners were willing to invest many millions of dollars and wait as long as necessary, but still no engineering company got involved. Then a very confident machine operator, one of the mine's employees, got on his excavator and, step by step, without any blueprint, built the impossible road *all by himself*. The cost to the mine was just his wages and the fuel burned by a single machine. Once the road was finished, the operator didn't think he had become an engineer, he didn't think he was better than engineers, or that big engineering companies had lost their purpose of existing; he just looked at the finished road and concluded that the mission of building it had been perfect for him. What happened is easy to understand: engineering companies need to follow protocols that give legitimacy and guarantee the projects, while our machine operator relied only on his instinct, to show him the next steps to follow, and to prevent him and his excavator from rolling down the mountain during the construction. **Space Flow is the analogue, in physics philosophy, of the operator who took his excavator and, because he did not feel obliged to follow any protocol, built the impossible road.*

Table of Contents

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