This theory can be found at neuromaton.wordpress.com as well. It was originally not intended to be distributed by pdf-file. Please excuse any shortcomings, especially about the pictures, that are the result of this. It has been uploaded to vixra.org as a means of making it available in another form and to make sure that authorship is respected. For reading convenience I would recommend using the site neuromaton.wordpress.com.

Theory of the Sphere Grid Aether

by

Kemeny Matthias

Abstract

Much Time has passed since the Aether has been rejected as a possibility. Now I believe we have to go back to this way of thinking. This theory proposes an Aether that behaves like a liquid and is made of femtometer-sized units. The goal is to find similarities between an Aether and the behaviour of liquids so those principles can be combined. The description will include the most basic observations in Quantum Physics and try to integrate them into a model of a liquid aether. It can therefore be called a „Theory of Everything“. All the experimenta cruces will be considered. It will also combine the fundamental interactions into one origin. This model can be tested, and simulated.

The Theory

For a few years I have been thinking about a possibility to connect Gravity to electromagnetic radiation. It is essentially a Aether-Theory, with an Aether that is at rest relative to motion. So if you do not believe that something like this might exist you should stop reading right here. But the reason why current physics is more or less stuck might be because they exclude the possibility of an Aether existing, although Einstein said this option has not been ruled out. And that was half a century after the famous Michelson-Morley-Experiment.
Bear in mind that even the current explanation of the origin of nuclear binding force is still very theoretical. And it does not provide the connection to mass, Inertia, Gravity, speed of light, universe expansion and fusion/fission energy output, while this theory provides a system that can combine these effects.

I tried to design a cosmic background structure. But it can only be considered background on our level of perception which so far can not provide the means to actually see it, even when using the present possibilities of science. Our only means to access the world behind the one we have so far described would be our imagination. While of course basing it on observations in quantum physics that give us hints as to how a structure like that needs to look like. Especially those observations will be important that so far lack a satisfying explanation.
So my goal would be to shape this idea in your imagination. One of the main weaknesses of quantum physics is that it cannot be imagined. I would like to change that. And I would like to get you to think in aether-terms, a way of thinking that fundamentally believes in a structure that composes what we have believed to be emptieness since the Theory of Relativity has been established.
This concept will challenge a few of the currently accepted understandings of physics. Especially concerning the nuclear forces and their origin.

I will adress a famous quote from Einstein, which he wrote in his "Autobiographical Notes", to Einstein himself now:

"Enough of this. Newton, forgive me; you found the only way which, in your age, was just about possible for a man of highest thought and creative power. The concepts, which you created, are even today still guiding our thinking in physics, although we now know that they will have to be replaced by others farther removed from the sphere of immediate experience, if we aim at a profounder understanding of relationships."

So now, Einstein, please forgive me.

Essentially I applied the idea of matter being made of small units on what we call space. This has been done before but not in the way I have done it. I have focused much on Gravity and nuclear forces, and less on electromagnetic radiation because of its very complex nature (compared to Gravity). I have made sure that the propagation speed of this radiation would be possible and I will explain how this is keeping mass from going as fast as that.

This system needs to allow for all of the observations of quantum physics we have made so far and it also has to be something that we could have overlooked up to this point. And I have found a possibility that is only made of three components and one basic universal force that would be the combination of the fundamental interactions. Two of those components can be considered new, the third one is mass which will be getting a new definition within this theory, as is to be expected from an Aether Theory.

It has to be noted that I am not a physicist and this is of course a theory. I am a student of a different field of science. But I believe this is probably an advantage for this because I have a very different approach to this question compared to the real physicists. You may call it naive and you might be right but I believe this to be advantageous. And you will only need basic knowledge of quantum physics to understand it. Imagination will be challenged more than mathematical skills, and I think this suits many people.
And please excuse inadequacies in my utilization of the english language. It is not my first language.

Some people will laugh at this attempt, so I have to tell them now that this is not about being right. As Bruce Lee once said: "Don't fear failure. Not failure, but low aim, is the crime. In great attempts it is glorious even to fail".
I enjoy thinking about the questions that have not been answered yet. I have learned a lot by collecting the necessary information and testing my system against it. And I strongly believe there is a substance that we are submerged in. But naturally not a substance in the traditional sense. It is the aether that many scientists have believed in. I think we have go back to this way of thinking to have a chance of advancing in our understanding of our surroundings.

The problem is: I was not able to disprove it. And I have spent quite some time trying to do so, with extensive research. So I actually need someone to find mistakes, misinterpretations or miscalculations within this theory (or try the possibility of experimental proof that I will provide). It does lead to many answers to questions that arise from certain observations but it cannot explain everything. Still many scientists believe that a system that answers a lot of questions should at least be considered, and it is a very dynamic system that can behave in ways that do not easily come to mind when just observing the basic parameters.

This theory would basically allow for an explanation of a few observations:

- Why mass can not go as fast as light
- Relativity
- Why mass and energy are equivalent ($E=mc^2$) and how/why this is connected to the speed of light
- The Heisenberg Uncertainty Principle
- Mass Defect
- Gravity
- The role of dark matter on a cosmic level
  (and how it leads to the observation of currently unexplainable kinetic energy)
- The origin of the nuclear binding force
- Inertia
- How a longitudinal wave can have transverse properties
- Universe expansion (and in special cases contraction)
- The origin and mechanics of fusion/fission energy output
- Time Dilation
- And of course how all of these phenomena are connected, and a possibility for proof

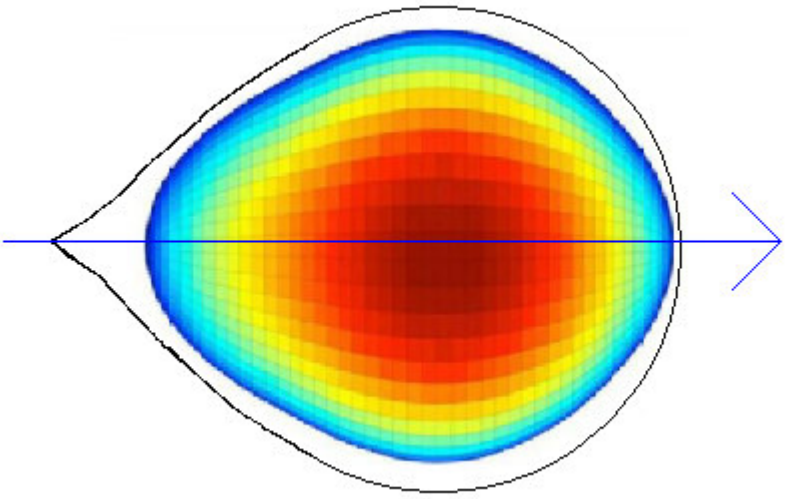
Please notice that there are still many important questions unanswered. Do not expect more than is listed here.

The problem with the explanation is that it is all connected, so it is not easy to find a suitable beginning for this. I will just start with the basic structure that is the basis for this theory:

The Spheres

A sphere can be understood as a quantum, as it is a quantification of space, but I do not like this mathematical expression, it is insufficient as a word for something that elementary, and it would also be misleading because the current definition of quantum is a quantization of energy and not necessarily equal to the structural quantization.

The first step would be to really let go of the idea that space is made of emptiness. There are many observations that would indicate a certain structure. The most prominent proof would of course be the Planck Relation. If you can only apply energy one quantum at a time then the most logical explanation would be that space is structured in a way that makes this possible or even necessary. Another strong indication is the Doppler Effect for electromagnetic radiation that is following the same principle as in a medium like water or air. And most prominently the equal speed of gravitational and light waves. Also the energy reduction with distance that a sound wave experiences in a medium is equal to the energy reduction of an electromagnetic wave with distance. Cerenkov-Radiation also provides a strong hint: In a medium that slows down the speed of light mass can go faster than that and with charges we see effects similar to the effects that are the result of surpassing the speed of sound in a medium like water or air, which can be understood as a supersonic boom made of light.
Einstein also found proof: In the equivalence of mass and energy, $E=mc^2$, and my conclusion on that would be that the energy that is contained in a massive particle is depending on a property of the medium surrounding the particle. This property is the speed of light (squared) which in our current understanding of this should not have influence on those forces. So the question is, why is it a factor. Einstein understood a fundamental law of nature, and this is the absolute nature of the speed of light. The speed of light is the basis of everything else. It is the factor that mathematically describes the force that is the combination of the fundamental interactions (therefore everything is relative to it).
And with the pear shape of Barium144 we have only recently found strong support for this theory. Experiments have shown that the nucleus of this atom can be shaped like a pear, and those pears all point to one direction in space. This shows our absolute vector of motion in space. It works as a compass. Combined with the experiment that I will describe at the end there should now be sufficient proof of this theory. But to understand how this design only allows for this shape in the direction of motion we will have to adress the basic elements first. I will give you a hint:



We also know of the Uncertainty Principle and this indicates that movement on a femtometer-level is happening in a way that direction (=position) and momentum are dynamically changing (wave-function). It could be called erratic, volatile or even jumpy. It follows rules that are different from our level of perception where we only perceive the effects it has on this higher level. The closer you look the more it would look different from our level. The Uncertainty Principle could therefore indicate that there are certain areas where mass cannot exist, from where it will actually be pushed away, resulting in a movement that increasingly resembles a wave the closer you look (with increasingly dynamic speed) and a line (at steady speed) if you move further away.
But mass is also affecting this structural element. And this interaction on the small scale needs to allow for all of the observations we have made so far on the large scale.

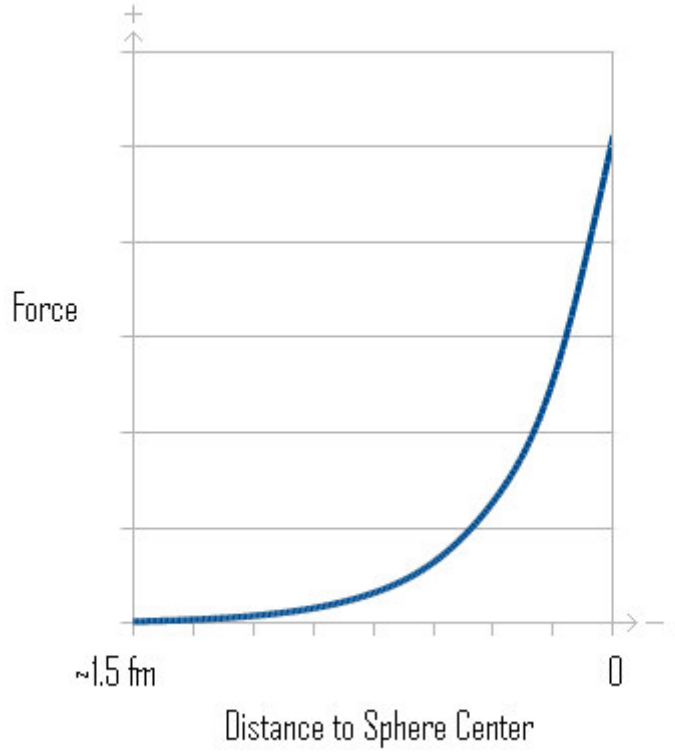
Enough introduction, I will now try to explain how this might work:

The nature of the spheres is very simple. They are field-like structures without mass, spherically shaped, about 2-3 femtometer in diameter, that are moveable without Inertia, but restricted by other spheres:

Their basic characteristic is a force that interacts with mass and other spheres. This force is the only defining characteristic of the spheres that is necessary for the explanation, so the force is equal to the spheres. It is spherically shaped, of repulsing nature towards mass and other spheres (outwards from center), following an exponential decay outwards, so the effect is concentrated in the center. The exact function and values of this force would have to be determined in (virtual) experiments, but for my explanation it is enough to assume an exponentially increasing force towards the center. In SciFi literature it would probably be called a force-field.
The whole point of this theory is to provide a framework that can provide enough restrictions so that only one function (and size) of the spheres will allow this behaviour.

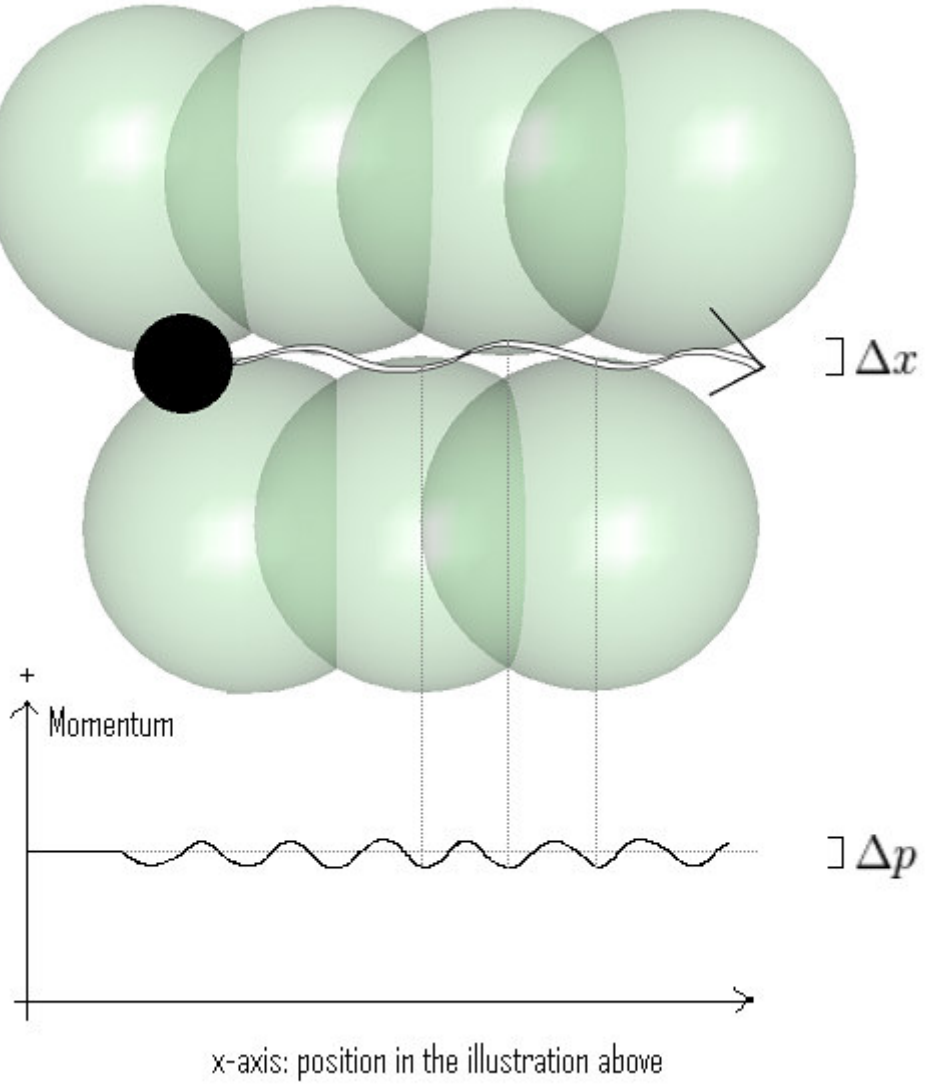
This would then have to be found in a simulation by a computer. It is possible to supply a computer with a "reward" structure that works similar to our brain. The closer you get to your goal the higher will be the reward. Basically it would begin with a rudimentary structure, combined with trial and error by an evolutionary algorithm. So that it gets closer and closer to the behavior that I will be describing. In the end only one curve and one size will be possible, one solution to this problem.

I will be using an exponentially increasing force because it is a intuitive concept. And it should work for all the effects that I am describing. But this should be seen as one of many possibilities, and my explanation will leave enough room for them. What can be said about the force with sufficient certainty is that it is strongest in the center and starts at zero. The question if it goes to infinity at the center or is reaching a maximum does also not have to be answered here. And we do also not need those answers for the experiment that can provide proof, which I will be describing at the end of this text.
If you have trouble picturing the force then just use one that you know from first hand experience: The opposing force between the equal poles of two magnets is a good enough approximation of the force between the spheres.



You may disagree with calling them "spheres" as it is a very common word, but I consider it a placeholder. Finding a word for something that fundamental is not an easy task so I avoided it. It would also be presumptous to give them a fancy name before there is definitive proof. And I will present a possibility that may yield a way of proving that it works this way.

I have mentioned the Heisenberg Uncertainty Principle that is describing the wave function of mass movement. I think an illustration of this can be of help:



This is only meant to describe a very early stage of the thought process. It will be explained more precisely as I go on. Mass (a nucleus indicated by the black circle) is affecting the spheres and this interaction leads to a dynamic that I will try to define more clearly. In a still image though it is necessary to simplify interactions so I tried to make the effect obvious by removing some of the dynamics and changing size relations.

The nucleus should be bigger than that, probably closer to the spheres and the spheres would of course be filling the "empty space", as is to be expected by an aether that has to behave like a liquid. It should be seen as a combination of still images. Notice how the points of lower speed correlate with the distance to the sphere centers, the distance to the force of the spheres. Simply put, the nucleus bounces between the spheres. But this would be an exaggeration. Maybe a spiraling tunnel would be a better description, with changes in speed that are related to the distance to the spheres.
Do not be mislead by the steady appearance of the wave function though. This is a result of simplification. The wave function is depending on speed and mass, and even with constant values it will be far more chaotic than displayed here, especially when you add the third dimension. I just tried to illustrate how the fluctuation range of momentum (Δp) and position (Δx), in other words: the deviation from the expected path, is being generated. This is mainly supposed to show the connection between position and momentum. The exact mechanic will be very much depending on the actual function and size of the spheres, where we have some flexibility. We also have to see this way of movement in the picture as being the result of a wave that the grid experiences (and which powers motion as you will see in the chapter "Gravity"), so we have a lot of possibilities to integrate the wave nature of mass into this theory. And the possibility of compatibility is sufficient for now because we have better approaches to find proof.
From a more general perspective the Heisenberg Uncertainty Principle can also be interpreted as a limit for any measurement. What I have shown in the illustration can not be measured. Our means of measurement are the spheres, the quantification of space, so going below this limit would be impossible. And the Uncertainty Principle would be a result of this quantification, so it might be possible to determine the size of the spheres using this principle as a goal for a simulation to attain.

As you might already be able to tell, the main assumption is that the energy contained in mass is the result of pressure and resistance to it (resulting in the nuclear force, the binding force) while of course allowing for a transformation of it.
The net force between sphere and mass will have to be different than that between spheres, so it is assumed to be based on a different interaction effect. The closer the particle gets to a sphere center the more force it (and the sphere) will experience, more than a sphere/sphere interaction would have at this distance. The result of this is the binding force. It is important to note that the binding force (nuclear force, or "strong force") of a bigger nucleus is therefor not equal to the pressure of the spheres surrounding the particle. The resistance to this pressure has to be taken into consideration.

We can compare it to a bubble in water that always has to withstand the pressure of the medium, so the pressure inside of the bubble will always be higher than the pressure of the medium, because otherwise it would simply collapse.
We can assume that even when the nucleus is further away from the spheres than the spheres are from each other the resulting binding force is greater than the pressure "outside" of the nucleus. Remember that the nuclear force has a peak of about 25kN. So the necessary amount of pressure to allow for the observed speed of sound in the medium is certainly possible. Especially since we assume that the sphere grid has no underlying Inertia, while any other medium that we know of is influenced by Inertia. The Inertia that is working for both movement and radiation in the sphere grid is only a result of the pressure. The grid *is* Inertia. There is also no "surface tension" (no cohesion) so Laplace equations do not apply.

For this to work we have to assume a very strong sphere/mass interaction force, it would be exceeding the force that is connected to the pressure of the medium. This might only work within a certain range of the size of the nucleus because we know that there is an upper limit to nucleus size.

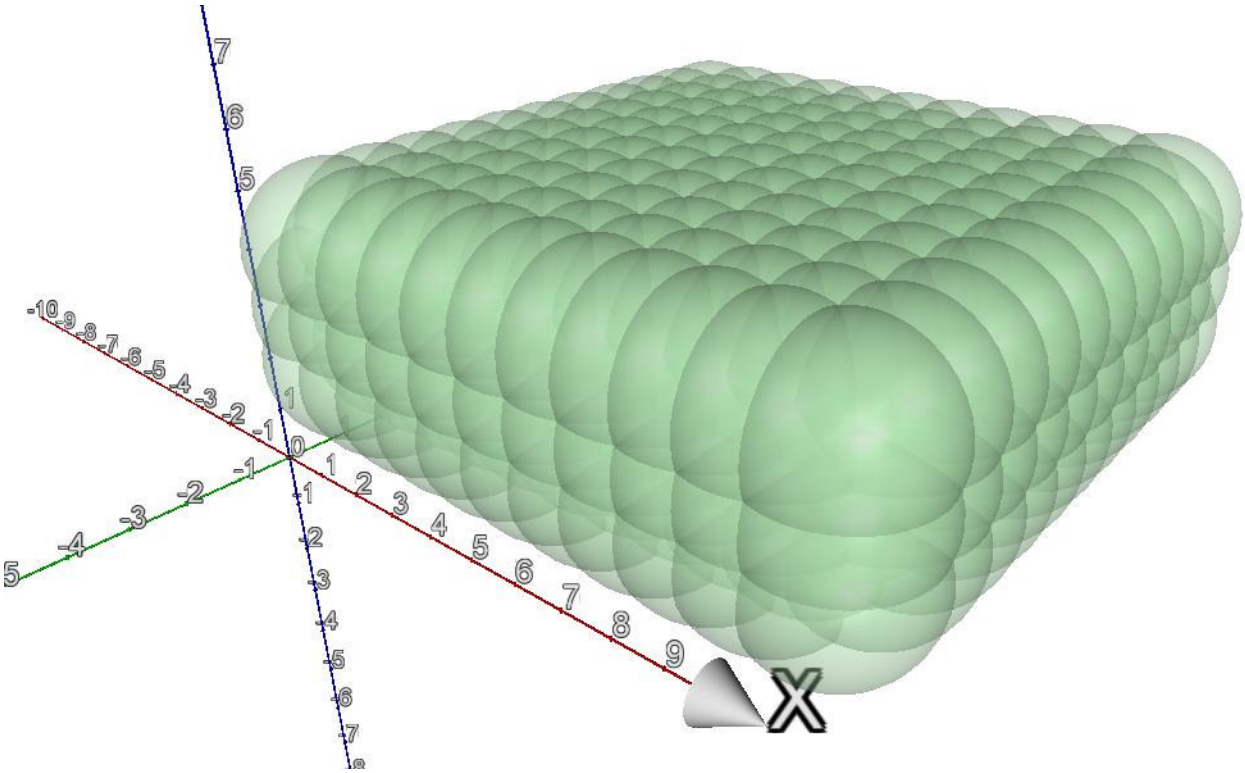
The sphere/mass interaction force is only based on the interaction effect, it is not a force that is originating in mass but in the spheres. Mass is only resisting this force, but this will also lead to an effect that can be described as a force. So this effect being a stronger force than the sphere grid pressure does not change the assumption that the sphere grid pressure is the combination of the fundamental interactions, the source of all energy, because it is also an effect originating in the force of the spheres. We also assume that the repulsion between nucleons is infinite at distances less than ~ 0.7 fm between their centers, to simplify things.

Maybe you should think about this for a moment. Because you will not find any experiment providing proof that the binding force is originating in the nucleon/nucleon interaction. The currently accepted explanation is a theory like this one, albeit mathematically sound. If you are thinking of the Michelson-Morley-Experiment then you should know that I will be explaining later why this experiment (or any variation of it) was not able to detect the sphere grid.

The pressure coming from the medium, creating the binding force, is a crucial assumption so if you think you have afore mentioned proof you do not need to continue reading. This is why I have put it here, even though it is a bit too early to be mentioning this. It will be explained further but I have no intention of wasting your time. Feel free to take any chance of disproving what I am saying.

There is a calculation based on fusion experiments that has shown that the size (diameter) of the spheres would have to be roughly in that area of 2-3 fm: If you move a nucleon away from the nucleus over this distance the nuclear forces will only reach that far. In this theory however it would be a sphere being allowed to move in between nucleus and the removed nucleon. But the sphere's size would be a bit bigger than that distance since the sphere's effect is concentrated mostly at the center.
Unfortunately the basis of our calculation of the range of the nuclear binding force will also be challenged in this theory (it is based on fusion mechanics). So the only assertion I can really make is that the size of a sphere is around 10^-15m or below. It can probably be derived from the Schrödinger equation and the Uncertainty Principle. So I am glad that knowing the exact size of the spheres is not crucial for this theory. The system works as a whole. How big exactly the parts of it are, is more of a minor detail. But we can use the 2-3 fm assumption so it will be more compatible with current physics. Even though I will be showing why this assumption might be wrong.

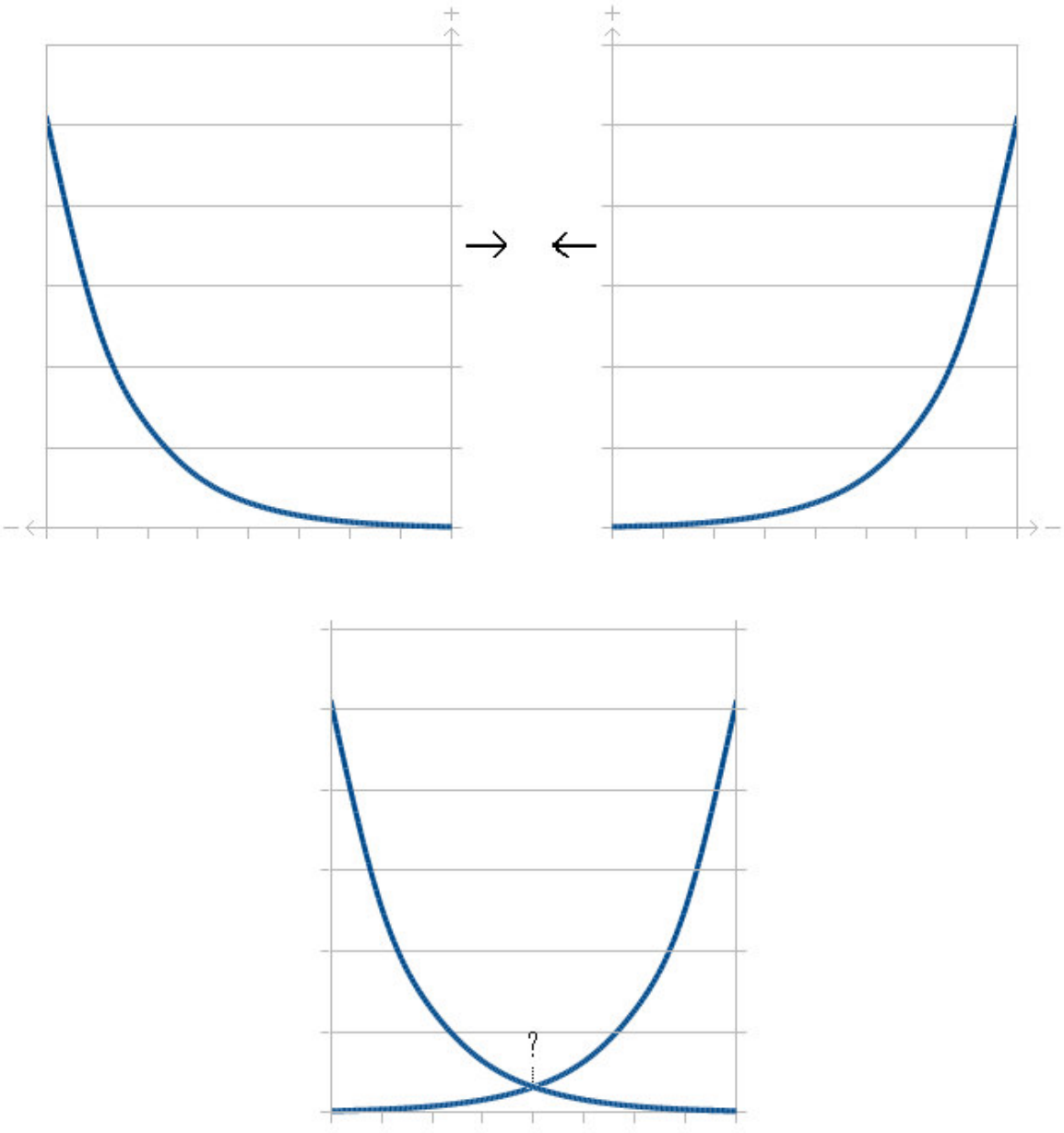
I will provide a little support for your imagination:



The next step would be to fill everything with the spheres. For now just imagine there is nothing else than spheres as is shown in the picture above.

As you can see in the very simplified picture the spheres are pushed into each other (which is necessary for this theory to work). This can be true if our universe is surrounded by a structure that provides the force necessary to keep the spheres condensed like this. This outer boundary structure would be made of dark matter, a structure of unknown nature, apart from its effect on the sphere grid. It is an elastic structure that is not only providing a certain amount of pressure to the sphere grid but also reacting to pressure changes in the grid with overall size increase or decrease. So it will always be maintaining a certain pressure on the sphere grid. I want to point out that we are dealing with 3 different interaction effects: Mass/sphere, sphere/sphere and sphere/dark matter. And within the assumption that dark matter is also made of small units we would have to add dark matter unit/dark matter unit. On a large scale this would mean that we exist in a capsule inside of dark matter, like being inside a balloon (where the sphere grid is the gas and dark matter is the balloon). I will refer to that "balloon" that we exist in as "our universe". What lies beyond that boundary is subject to speculation, the same is true for the shape of our universe as it does not have to be spherical, which also means it may not be identical with the observable universe. For calculation/imagination purposes though we can assume a spherical shape. Using an outer boundary structure here is a simplification that is needed because we need a source of the power/pressure. So there might be another form of energy creating this pressure, but it is easier to just use a structure that is applying it from "outside". And assuming that there is an end of space gives us the opportunity to calculate expansion effects.
In other universes (if there are any) the basic elements could have reached another form of equilibrium so whatever we observe here might not be true for another universe but it is very likely that other universes reach the same configuration when the elements and age of the universe are the same as in ours.
On the level of those balloons rules would of course be different as it is a much higher level of interactions where additional factors are important.

The main question now is what density does our sphere grid have:



And by density I mean the amount of overlap of the spheres. If you draw a box into a sphere grid area of a certain density and then take this box and put it inside a sphere grid area with higher density there would be more "space" contained in this box than there was inside the lower density area, due to increased overlap of the spheres. Of course the box would have to be made of a non-relativistic material (i.e. not based on spheres).

So to even be able to speak of density it is necessary to have a steady frame of reference, and this frame of reference would be the whole universe. To be able to picture all of this we will have to assume a form of non-relativistic space behind the sphere grid, for now. Like a container that is filled with water, where the whole container would be the frame of reference.
The density would be connected to the speed, much like sound waves in water. This does mean that we are measuring a longitudinal effect, and I will explain why this could make sense:

First of all we have to admit that we know little about the nature of light. We are only describing parts of it and the description is still inconclusive, we only have to look at the particle/wave duality. So the actual "substance" is still hidden from us.
Light or electromagnetic radiation in this theory would be understood as a vibrating sphere grid (similar to the Lorentz-aether) with compression and rarefaction waves like the physics of sound. But those waves only describe how this radiation is propagating, while still leaving room for transverse effects. So I am not trying to answer the question of the detailed mechanics of electromagnetic radiation. I am only providing a structure that is able to show this effect while still being compatible with physics of longitudinal waves, or of sound.
Apart from the transverse effects of the radiation everything else, i.e. the energy distribution/reduction with distance, works just as well with a longitudinal wave. Wavelengths of visible light are on a nanometer-level so there would be millions of spheres involved in one period (when observing a line of spheres, one sphere wide, but within that reduction we probably would not have transverse effects, so we can assume a lot more spheres, depending on the minimum amount of space volume that is needed to allow transverse effects). With light the transverse nature of the radiation would be an emerging effect on the nanometer-level. The transverse nature of the electromagnetic part of the radiation could be based on an excited state of the spheres, maybe even complementarily circular motions that can be propagated, and can be engineered when carefully using charges and movement in a very specific way. It would certainly be possible that the "ground-state" of spheres consists of a circular motion. And by that I mean a circular motion of the center of the spheres around an axis. Visualize every sphere running away from the others. If it is surrounded by others then it is possible that it will never really stay still (remember there is no Inertia working against this), and is running away in very small circles without Inertia while the axis of this circular motion can be freely changed, and is a result of the composition of the grid at that location. So by this motion the surrounding spheres will be influenced as well, they are also running away. This is initially not directed anywhere but rather chaotic.

However, if you bring a compression wave into this system you will see that this circular motion inside the wave must be perpendicular to the direction of motion of the wave due to the pressure coming from front and back forcing the the circular motion into a plane, creating a transverse effect, where the axis of the circular motion is the same as the direction vector of the wave. And all the spheres influenced by this wave will show a similar circular motion. The following decompression field would mean that the plane shifts 90°, because now the pressure from the sides is higher than the pressure from front and back, forcing the axis to be perpendicular to the direction vector of the wave. These two waves can be connected to the radiation that we call electromagnetic by assigning positive and negative to compression and decompression waves. But not only those waves will have this ability, charges as well would have the ability to synchronize this circular motion, to bring order into chaos.
We also have to assume that we can use charges to send a vibration through the grid that is based on this spin that I have described, rather than on actual density changes. The density changes connected to the way that antennas are working would be the result of this circular motion effect, and could therefor be called artificial. So you can initiate a vibration by only using this circular motion of the center of the spheres, which means that there is no permanent structural change connected to this disturbance, which seperates this effect from other sources of vibration, like fusion and fission, as I will be showing. Those will be the "real" sources of vibration due to density disturbance. It could also be possible that any wave that this system is producing is bound to obey certain laws, apart from the speed. The circular motion of the spheres could limit the grid to allow only this form of radiation that is called electromagnetic radiation, rather than the electromagnetic radiation only being a part of a more "random" vibration. In a way that any radiation must obey certain harmonics so the sphere grid itself will also follow these harmonics when we introduce a density disturbance. This should be compatible with Maxwell's equations.
However, it is still difficult to tell why the sources of the charge are affected by interaction of their connected field with another. And when we look at the radiation being connected to a force then it might also be possible that the rotation (=the turning) of the axis of the circular motion could lead to a force, so that the electromagnetic wave would have a phase difference compared to the compression/decompression waves of 180°. But this is too much speculation. As long as you agree that a longitudinal wave can have transverse properties, my goal is achieved.

To really determine wether or not this kind of radiation is possible or impossible within this theory we would need a better definition of electric and magnetic fields that would allow a judgement. So far we are only describing these effects with tools that are part of a bigger system which limits what they can show us. We are basically only measuring the interaction of fields of a certain nature, which lack a definition besides of what we are able to measure. And you will have noticed that I have not listed charges or electromagnetic radiation (in general) as a phenomenon that would be explained in this theory. In fact I will not touch the electron in this theory at all. I just wanted to show that there is a possibility for transverse waves to exist in a liquid medium.
Another problem would be that I have only defined a basic force of the spheres that allows for the explanation of a few phenomena, but the actual nature of the spheres could be different, because the question is raised how the spheres are able to maintain this force, and the exact way they do it could also influence radiation. They might be made of even smaller units like we have shown for nucleons. But this would make calculations too complex and for those phenomena that I am focusing on the description using only the opposing exponential sphere force is sufficient. So be aware that they are just a simplified mathematical construct to help with seeing what we can not see yet. Im ignoring the details of electromagnetic radiation on purpose because when you define a system that allows for many observations then the rest should "fall into place" if you are correct. This is called a prediction (if it is not yet a known fact) and I will try to show you some of those predictions towards the end of this text. But we have to go through the basics first.
The vibration of the sphere grid is only a good way of describing the effect as long as we do not look at the parts that it is made of, the quanta. We have to assume that the Inertia of the sphere grid is quantized. The minimum energy (depending on the frequency) for sending a change through the grid would be defined by the Planck Relation. This can also be understood as the Inertia that the grid has towards reacting with a vibration. And disturbancies in the density (=vibration) propagate by applying quanta of energy (that is originating in the density disturbancies) to the grid by a longitudinal effect. This amount is based on the wavelength as it is with any form of radiation.
As I have said, within this theory we would have to separate the speed of the radiation from its transverse nature. While the speed would be based on a longitudinal effect the transverse nature of the radiation would be based on an emerging effect of the radiation. This will be easier to understand once we get to the origin of the radiation that is being emitted in nuclear fusion and fission that will be explained in the chapter "$E=mc^2$". And I want to emphasize the term *origin* because that is what I am focusing on. The origin of the amount of energy that defines the radiation. While ignoring the particular nature or form of the radiation, apart from the speed.

There are endless possibilities of how exactly changes in the grid would propagate through it and how those waves would interact with each other, so let us leave it at that.
I admit that lacking a definitive explanation of the particular nature of electromagnetic radiation (apart from its speed being caused by its longitudinal part) is certainly a weak point in this theory. But because there are many forces, i.e. many spheres, interacting I am not able to reduce them in a calculation to a complexity that is manageable. But reducing complexity can be done with a lot less effort for other phenomena, especially for effects connected to high energy (=vibration) measurement, so I will focus on these. And those will of course be the strong points of this theory. I believe that a system that provides a certain amount of explanation while leaving possibilities for the remaining observations is good enough, unless it can be disproved. But you will only be able to judge these possibilities after going through the whole design. Especially the explanation of the change in Mass Defect (which is the mathematical origin of high amounts of release-able energy) in chapter "E=mc²" might offer a satisfying connection to electromagnetic radiation, in this case to the electromagnetic radiation that is connected to nuclear fission and fusion.

So let us move on to measuring the speed of light, where we will have to describe the longitudinal effect:
We know from the speed of sound that compressibility and density are the main factors to determine the speed of sound in liquids and there are enough similarities to liquids to apply this formula here. There are no cohesive effects and it can even be considered a "perfect fluid", apart from the compressibility being a factor.
When we look at the speed of sound in liquids we see that c^2 is equal to the ratio of the bulk modulus to the density.

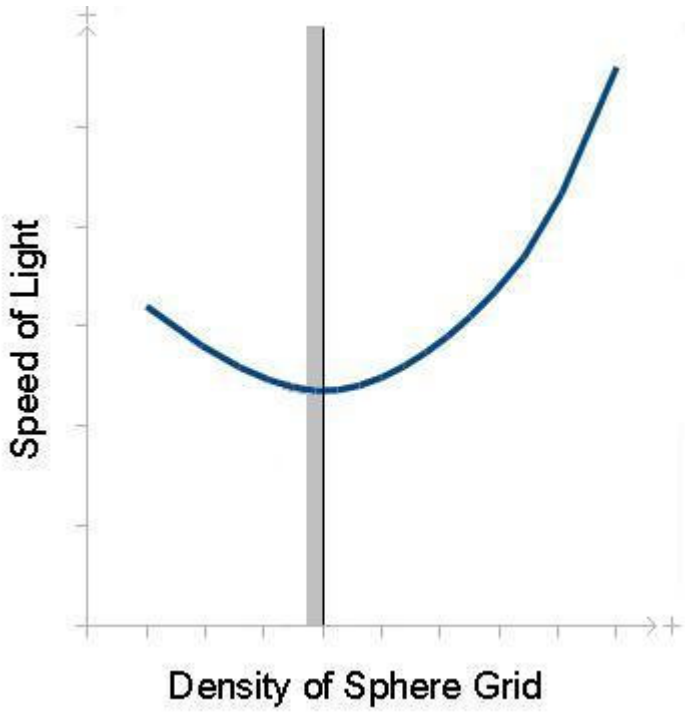
$$c^2 = \frac{ElasticProperty}{InertialProperty} = \frac{BulkModulus}{Density} = \frac{B}{\varrho}$$

The bulk modulus is defined as the ratio between the pressure increase to the volume decrease, ergo the inverse of this factor would describe the compressibility. This means that a lower compressibility (more pressure needed for a certain compression) will increase the speed of light and a higher compressibility (structure is more easily compressed) would lead to a lower speed.
In this theory the bulk modulus is only a function of the density as the density describes how much pressure is needed to achieve a certain compression. So c^2 equals the ratio of a function of the density to the density.

Unfortunately in this theory we have a material that is not solid nor liquid nor gas, but more like liquid than anything else. Especially the inertial factor, the density that is defined as mass per volume, can not be easily applied here. But the point that I want to make is that c^2 equals a function of the density. Therefor in $E=mc^2$ we can replace c^2 with a function of the density of the sphere grid, because the density is the only variable there, apart from mass. So c^2 completely describes the medium as far as its energy is concerned (compressibility). This might be difficult to imagine and you will get a clearer picture of this connection with the conclusions that are part of the chapter "$E=mc^2$" but for now I want to focus on the speed of light.

The function of the speed of light compared to the density would have to look (partly) like the following function graph. It is not supposed to be accurate, it is an approximation. The most important aspect of it is the turning point at minimum speed. Of course the spheres will have to be in physical contact for this. When we move our focus from a very low density to a higher density (which is only possible theoretically because in reality the variation of the density can only happen in a very small area) the speed will initially go down because of the slowing effect of 1/density but when we reach higher levels of compression the grid will have a higher resistance to further compression due to the exponential nature of the force of the spheres which will increase the speed of light and overcome the slowing effect of the increase in density at a certain point. These two effects of reducing and increasing speed will define two mathematically different areas of space as far as a calculation is concerned where the speed of light is used as a factor to describe space. To understand my reasoning behind this we have to look at the way Inertia works within this system. Usually when a liquid is described we have a different way of Inertia changing this curve. When density increases in water the terms of Elasticity and Density are not connected to each other. In this theory they are. With the sphere grid Compressibility is equal to Inertia. But this does not yet mean that we would measure a constant speed of sound with density changes. Because distance has to be taken into consideration. Along a line of a certain length there are a number of units that need to be moved to propagate a wave. This number changes with density. So a density increase would slow down the wave only because more units have to be moved, which can be interpreted as a increase in distance (for the wave) measured in spheres. In water this is the Inertial Property because this is the mass density. But with the sphere grid Inertia itself will change, not only the number of the units along this line. Inertia itself does not change in water with compressibility changes. So in the sphere grid the turning point is a result of this increase of distance with density increase. Because at some point the decrease of compressibility will be large enough to compensate for the increase of distance.

Picture the water molecules getting heavier (more mass -> more Inertia) with increasing density. This would slow down the wave. And in the sphere grid this is the case. But it is compensated by the compressibility, which is the same factor, only inversely proportional. So the factor of increased distance that is described by the Mass Density in water is still apparent in the sphere grid, but this is not based on Inertia as it would with water, but on distance relative to a reference frame.
This turning point in a speed of sound diagram of a liquid can also be observed with the speed of sound in ocean water, with depth (-> pressure) and temperature being the two dominant factors there. And it is fortunate that the temperature helps showing the effect because there are certain limitations to the minimum density (=pressure) of water, so it is possible we would not see a turning point without the influence of temperature.



But keep in mind these graphs are only supposed to show part of the function, and we have not yet included Relativity. The grey space would indicate the nature of space as we know it. The pressure applied by dark matter is responsible for the initial pressure in the universe (without mass), while there can be variations due to the existence of mass but those will be very small. Those variations are what Einstein called the "Bending of Spacetime". So they are equal to the changes that we see as effects based on Gravity.

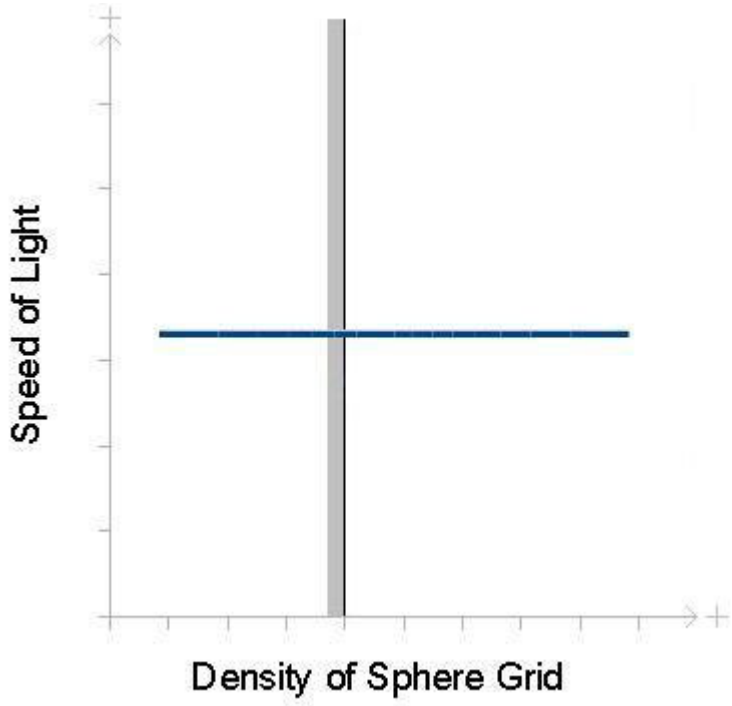
The black line indicating the turning point would be equal to the Schwarzschild-Radius. Within this radius we will encounter new effects because density would reach otherwise unachievable levels. The Schwarzschild-radius would be the turning point between density and compressibility being the dominant factors, where the speed of light reaches a minimum. So the SOFAR-channel in ocean water and the Schwarzschild-radius share some similarities. We can therefore assume that certain wave phenomena would also lead to unexpected behaviour at the Schwarzschild-radius, like with the SOFAR-channel. But this is going into details of the wave mechanics again and we want to avoid this.

You are probably asking: "Isn't the speed of light constant?" And you are right: The measurement of the speed of light must be based on a distance so this graph only describes the measurements that we would see if we were to create an artificial sphere grid here on earth, that is inside a steady volume (with unlimited structural resistance of the outer boundary), where pressure increase is achieved by adding more spheres. This way we can show the effect of the density on speed. It is necessary to do so to have a frame of reference because in space distance would be relative to the density of the sphere grid. This is based on the assumption that in molecules the distance between nuclei is based on a number of spheres, so distance is relativistic, which means we would still always be measuring the same distance but viewed from a frame of reference of different density it would appear different. But we can not necessarily see these differences optically, it is just a structural difference.
The graph shows that the speed would change but that is only true as long as you have this frame of reference behind the sphere grid. When you do not have that, and Relativity comes into play, the speed does not change with density changes. To understand why this is happening we will again analyse the way that the Inertial Property of the medium reduces the speed of sound in water. Along a line of a certain length we will have to move all of the molecules to be able to propagate a wave. This number of molecules along this line increases when density increases leading to the increase of the Inertial Property. And there is the difference to the sphere grid: Length would be measured in number of spheres. This represents a form of Relativity and can be easily understood if you think of atomic bond distance based on a constant number of spheres rather than on a otherwise defined distance. So the number of spheres over a certain distance does not change with density increase as it would with water (as long as movement speed is not taken into account). In water we would have to move more mass for the wave to cover a certain distance when density increases, and this increase in mass/Inertia will slow down the speed of the wave.

But with the sphere grid there is no increase in number of inertial units, while it still must have a Inertial Property, so with Relativity added to the equation the only form of Inertia is the decrease of compressibility (increase of density) again, because it makes the grid more rigid, and there will be more energy required to achieve a certain vibration effect which slows the speed of waves through the medium. But we will not be measuring this as a slowdown of the speed of light, because it is compensated by the elastic property (again based on the compressibility), which increases light speed.

But we do measure part of the effect: The increased Inertia of the medium that is defining the most important factor of the universe (speed of light) will result in effects that will present themselves as a change of the speed of time (every action will require more energy), and this is not only affecting vibration of the grid but also active movement. Increased Inertia of the medium will affect everything. But there is also the effect that a higher density also means more available energy (which is directly visible as the effect of Gravity), so the balance is maintained (more energy required = more energy available) but the higher energy level is something that would (in comparison / relative) still be of importance. We can even see this difference in energy levels because it shows as a gravitational redshift/blueshift.

So a change in density will lead to a change of the Elastic Property and an equal change of the Inertial Property when we add Relativity (both are equally related to the pressure, but with opposite effects/sign), and we get:



I am aware this does not explain the null result of the Michelson-Morley-Experiment. But we still need this effect for density changes to be undetectable. There is an effect that makes the density changes visible and noticeable, which will be adressed in the chapter "Gravity".

This also means that the dark matter surrounding our universe would have to have an exact structural resistance that would be responsible for the inital amount of pressure.For this the involved forces would have to be at a certain equilibrium, a certain configuration to make this work. I am not able to calculate this but we have computers for this. I just believe that such a configuration can exist. This simulation would not be very complex since we know the speed of light, so initially the (absolute) forces involved need to be defined in a way that the speed of light equals our measurements.

We have so far established foremost that the speed of light would be correlating with the density of the sphere grid.

To help with picturing what I have in mind I need to emphasize the pressure that is correlated to the density. This pressure would be the one force that everything is based upon. Also everything would therefore be relative to this force, as Einstein has established.

We have also provided that dark matter is the force that is responsible for maintaining the initial density/pressure/speed of light of the sphere grid, so we can move on to mass:

As I have previously mentioned mass and spheres are interacting due to the nature of mass being somehow susceptible to the force of the spheres.

If you put one nucleus into the sphere grid with no other mass present (for an easier picture), the first effect that can be observed would be the displacement of a certain amount of the sphere grid (this shows up as the amount of mass of the particle) leading to the expansion of the universe, as the structural resistance of the surrounding dark matter is limited. This can be understood as the effect of creating a hole in the sphere grid that "travels" with the nucleus, like a bubble. Suppose you tried to boil the water at the bottom of a narrow, 10 meter long tube. The vapor in an expanding bubble on the bottom must lift the entire mass of water to displace the surface. Something similar is happening here. This expansion of the universe would be fundamentally required for this theory to work.
Imagine you take that massive particle out of the sphere grid, how much vibration you will get from the universe reacting to this change (less universe size) following $E=mc^2$, where m is the displacement). It can be compared to an effect that we can observe in water: Sonoluminescence, which is the effect of collapsing bubbles in a liquid leading to a strong vibration that even produces light. It should not be a problem to test if the energy released with Sonoluminescence follows $E=displacement*c^2$, as predicted by this theory.

The second effect that has to be noted would be the compression of spheres surrounding mass. We see proof of this in the form of the Mass Defect and Gravity. For the purpose of this image we can just use a nucleus again. There is not only displacement connected to its existence. The pressure of spheres (i.e. the density) around the nucleus increases permanently. This density decrease away from mass follows the same function as Newton's Law of Gravity, $1/r^2$. So the nucleus would also change the whole universe as far as the density (=overlap) of the spheres is concerned. You can probably see where this is going so for the purposes of this theory I would like you to add this principle to your associations with the word "Gravity" or the gravitational field. It will be of importance to understand some of the explanations. You may ask why this is happening this way, but I can only supply an unsatisfying explanation. This assumption is based on our measurements of Gravity rather than on an otherwise sufficient explanation. You can imagine the spheres between dark matter and mass acting basically like a spring. So I would base the assumption that there is a change in sphere volume overlap that is distributed following $1/r^2$ on the thought that the forces applied to both ends of the spring are different in nature, besides basing it on our measurements. This can probably be simulated with magnets since you can make a row of repelling magnets that together behave like a spring. Add forces to that spring that would be similar to the two forces that I have mentioned and this could be tested.
The intensity of this effect is depending on the amount of mass. Displacement and Gravity are fundamentally tied together. Any displacement will have this effect. I have only separated them to be able to explain it. It is important to note that an increase in the pressure will be affecting the particle again, because the higher pressure around it will also make it smaller and increase the binding force (based on sphere/mass interaction) as potential energy. This way a size increase of the bubble will always affect itself by a pressure increase (binding energy increase), and a size decrease (mass decrease) by a certain factor, which is almost constant. It is a small adjustment but it is visible as the Mass Defect. So the Mass Defect is a result of Gravity and the Sphere/Mass interaction.

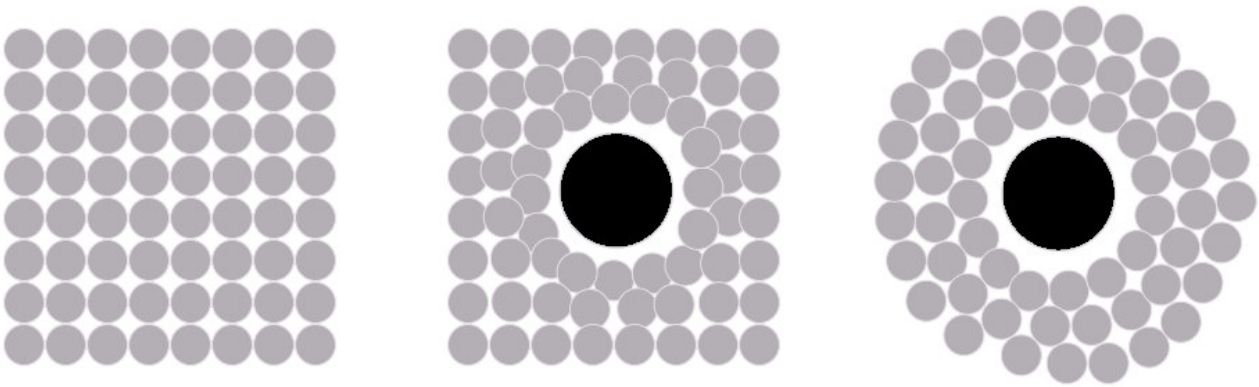
In conclusion it is also working on a single nucleon which means that within a nucleus composed of more than one nucleon we would only measure the increase in binding energy (increase in Mass Defect or increase in potential energy), not an absolute value. So the Mass Defect also works on a single particle but we have no good reference to compare it to.
The structural change of the universe connected to Gravity is very small. As we all know Gravity is a tiny force.

As for the nature of these forces, the one supplied by dark matter would be elastic and passive, the resistance to this force originating in the interaction between mass and spheres would be an active force and this difference would lead to the distribution of the change in sphere volume overlap from the mass to dark matter following $1/r^2$. Of course the absolute change in density is very small, even smaller at a certain distance, depending on the mass, as Newton has established. But it is still there. Until it hits dark matter. I have previously said that dark matter provides a certain amount of pressure but here we have an increase in pressure that is not compensated by the expansion of the universe (Mass Defect, Gravity) so the pressure of the dark matter on the sphere grid has to increase with volume increase of the grid connected to the introduction of mass into it, similar to a balloon that reacts to pressure changes with a size change but also a tension change which provides a counter-pressure leading to an equilibrium.

In the following picture I tried to draw this, but be aware this is only supposed to illustrate the idea, a support for imagination. I have reduced the spheres in the picture to their non-overlapping area and made it two-dimensional and based on a homogenous density so that the effect of mass is easier to see. The circle in the center shows a simplified nucleus.

As mentioned, the expansion of the universe is a factor here as the change in density will be compensated mostly by expanding of the whole grid. The illustration in the center would be the case if there was no expansion of the universe (provided an unlimited structural resistance of the outer boundary) while the one on the right shows the added effect of expansion. In a way the particle becomes part of the grid.
It would be like a bubble of gas in water. It would increase the volume and be subject to the pressure of the medium. Most important would be the force that is the result of the interaction between those two materials, mass and sphere, the nuclear binding force. This description as a "binding force" however is inaccurate because it completely ignores the effect that this has on the grid. Therefor I have to define the force that is connected to the mass/sphere interaction as "sphere resistance force" or SRF. It is equal to the binding force but incorporates more of the connected mechanics.

The actual compression (at least within the adapting universal structure as shown on the right) would probably not even be visible if I was to create an accurate illustration. And in reality the overlap increase due to mass would be perfectly distributed, decreasing with the square of the distance. Unfortunately I do not have the time nor the means to create a mathematically perfect picture.



This change in volume of the universe due to the creation of mass must have happened when the universe was very young. But it would still have to expand due to other factors that I will describe later. Also the expansion from the creation of mass might still be ongoing, or mass is still being created. There are a few possibilities. But if creation of mass is still ongoing (in large amounts) it would interfere with the balance that our universe has reached. So this is not likely to happen within this theory. Because this balance is what it is all about, as you will soon be able to see.

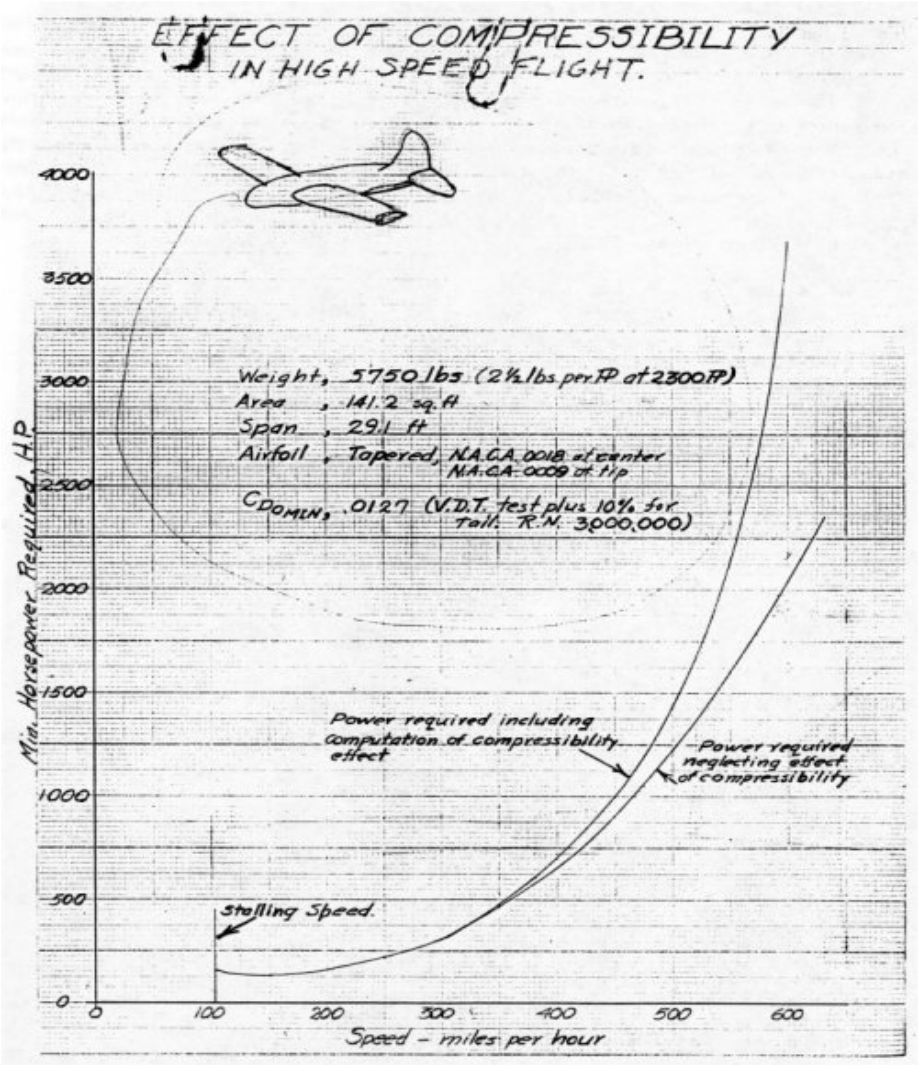
Speed of light and mass

We have established that the speed of light is a constant when Relativity is being considered, but so far we have not talked about movement. The first question that needs to be answered is why mass can not go as fast as light (in vacuum). For this we can simply look at objects moving in another medium, like air. The required energy for surpassing the speed of sound in this medium is based on the pressure, on earth this pressure is based on Gravity, so it is by definition limited by this force. This also works for the Sphere Grid. But the way that movement works will make reaching this speed impossible. It is only working the way that it does due to the sphere grid mechanics. In a medium like air we measure only effects that are connected to the mechanics of sound wave propagation in that medium, but with a medium like the sphere grid movement will be affected at the most fundamental level.

The main reason why the speed of light is also the maximum speed of any mass is the speed at which the gravitational field expands around a nucleus. This is of course happening at the speed of light as it follows the same principles. For a better understanding you could imagine the hole in the grid as something autonomous that has its own parameters. You can picture it like a bubble of gas in water. In fact it is not the mass that is moving but the bubble itself. Mass is only providing the resistance to the spheres to maintain this bubble in the grid.

And if you have a nucleus moving in its bubble through the sphere grid it is this resistance that allows movement, and it also powers the expansion by this SRF. If you would try to exceed the speed of light you will not get any more help from SRF to achieve a relocation of the bubble. This means for movement of the bubble in the sphere grid that is not caused by SRF you would have to move the spheres away solely by acceleration energy. But from where would you take this energy? SRF provides the energy that is being used for motion because it is responsible for the displacement that powers the motion (see chapter Gravity).

If you would somehow be able to overcome this resistance with applied acceleration we would see an effect similar to the supersonic boom, a shock wave made of space that would probably have a very destructive effect on any form of structure that has so far established inside that given universe. It might also destroy the dark matter surrounding the universe, but as I said, there is not enough energy available to do so.
The following chart should make this clear. The compressibility added to the calculation shown in this picture would be the same as adding the Lorentz-Factor to the formula of kinetic energy $E=mv^2/2$. But we are dealing with very different energy levels here. Still, the principle of the effect is similar but the difference remains that you can not go past the speed of sound in the sphere grid.



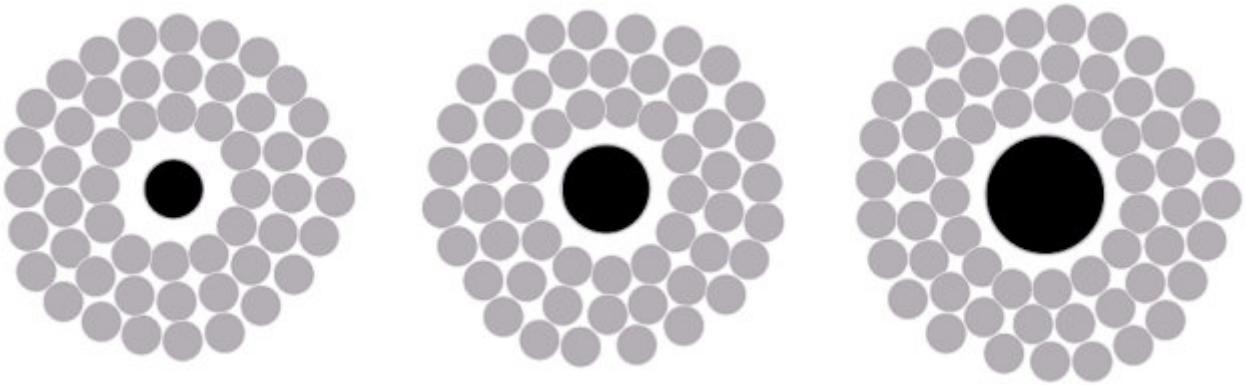
E=mc²

When we apply all this to Einstein's work we have the means to explain how mass and energy are equivalent, with influence of the speed of light. I have asked myself what does the speed of light have to do with forces of a nucleus? It does not make much sense. If the speed of light was changed, then energy contained in a massive particle would be changed as well. So this demands an explanation.

As I have stated the speed of light is derived from the density of the sphere grid (and is therefore a characteristic of a given universe, at least it being within a certain average range) and describes all the necessary properties of the medium for energy purposes. The binding force of the nucleons is applied by the spheres and is therefore depending on the sphere density (or the speed of light) and the amount of mass (bubble size/displacement), and in the end also dark matter. In other words the nuclear binding force is space trying to close the hole. This pressure is resisted by the nucleus, keeping it together. But it is not only the pressure applied that causes it but the very nature of mass that makes it interacting with the force of the spheres (and also with the surrounding structure of dark matter).

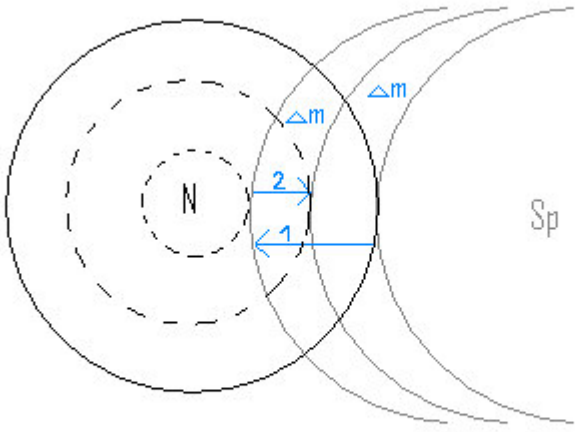
We know that with size increase of the nucleus there is also an increase of potential energy inside the nucleus, represented as an increase in binding energy. And we are able to release this increase of energy by fission. Currently we believe that this energy is somehow stored inside the nucleus, but within my theory it would be stored in the gravitational field, ergo in the whole universe (with the increase in binding energy of the nucleus being a result of this change).

The size of the bubble (displacement) and the pressure of the medium determine how much force is being applied, ergo how much it is subject to gravitational acceleration (see chapter Gravity) and how much mass it has, ignoring the pressure changes throughout the medium for now. Compared to the size of the bubble of each individual nucleon combined there will be a difference that would be the Mass Defect. When the pressure on the nucleus increases, due to a size change of the bubble and the connected change in Gravity, the amount of displaced space decreases per nucleon. The measurement of mass would be equal to the displacement of the medium, the spheres. A single nucleon will have maximum distance to the sphere centers around it (lowest potential energy) but would of course still be in "physical" contact. This distance decreases with number of nucleons as the size of the bubble and therefore the pressure applied increases. Therefore the displacement of spheres per nucleon is growing with nucleus size decrease. Gravity is responsible for this. The pressure increase around the nucleus that is connected to size increase (Gravity increase) of the nucleus will lead to a higher pressure on the bigger nucleus which will not only be partly resisted by mass but also partly leading to universe size increase (resulting in the increase of binding energy). So if you fuse 2 nucleons they will not have double mass because double mass means double Gravity and there is a pressure change connected to double Gravity that will change the size of the bigger nucleus again.



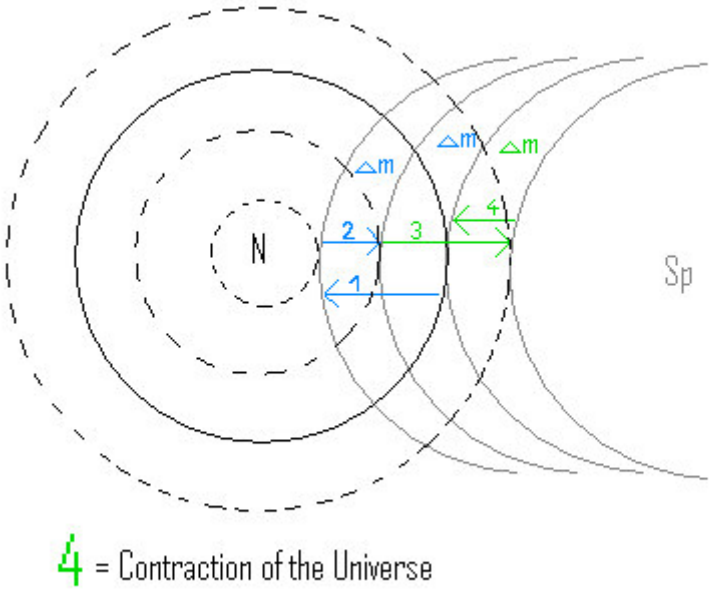
So this bubble will be smaller (per nucleon) the bigger it gets, due to the increasing pressure which is the result of increase in Gravity.
So it is true that the Mass Defect is correlating with the change in pressure on the nucleus or with the change in binding energy. The radiation that is being emitted if you change the size of the hole would be like a readjustment of the grid (proportional to the change in Mass -> Δm). The change in mass is also the amount of structural imbalance due to the forming of larger or smaller bubbles: What we are seeing, when we see light from the sun is the universe trying to maintain a certain balance of the sphere grid. This balance has been disturbed by the forming of larger bubbles, due to a change of displacement, ergo a change in mass, due to Gravity. It would take a while until a stable state would again be achieved. These changes in grid pressure will be very small but still bear great force, at least for us humans.
But there is a certain question arising from these mechanics. I have seperated the effect of the increase of binding energy due to fusion from the effect of the radiation (or universe expansion). But we know that both effects are equal Δm. So there has to be a certain symmetry. When we look at a nucleus that has just been fused from two smaller nuclei, just at that moment when the added temporary displacement that has been maintained by movement energy of the smaller nuclei is being absorbed by the forming of a larger nucleus, storing this energy inside it, we can now observe how the universe must react to try to allow this to equal our measurements. The effect of higher pressure due to Gravity on a larger bubble/hole in the grid initially leads to a size decrease of/mass decrease of/pressure increase on the fused nucleus that is equal to 2*Δm but then half of this is being resisted by mass, leading to the expansion (at first leading to a strong vibration while a new balance at 50% of those 2*Δm is being achieved) and an equal binding energy increase (which will be fluctuating with the vibration of the grid during this effect). So there is a certain symmetry but I can not exactly point to the origin of it. It is just necessary for it to work this way to make sense mathematically. To understand this we can picture 2 equal nucleons fusing: We would expect double mass, which is double displacement, and double Gravity which is a result of the displacement, but we would not expect a change in universe size because this change due to the existence of mass has already happened, and double mass would not change anything about that. But double Gravity also means double amount of pressure (that is the result of Gravity, not the total pressure) on the fused nucleus and this leads to a necessary change because mass is able to resist this pressure. This is why we can have an increase in universe expansion while also having a mass decrease which is not intuitive, not even in this system.

It is still difficult to answer the question why there is a surplus of released energy for some reactions and a surplus of required energy for others. But this shows that the required energy is proportional to the binding energy, and measurements have shown that this energy increase with size of the nucleus is not increasing in a linear way (based on mass/sphere interaction), so a turning point can be expected. The prerequisite of this reaction would be based on sphere/sphere interaction around the nucleus (this is the amount of energy needed to get the reaction going) which is relative to the binding energy, while the binding energy itself is based on mass/sphere interaction, so the difference between those interactions is also the basis for the different results of the reaction, wether it will be exothermic, equithermic or endothermic.
The following picture shows the reaction of the universe to a nucleus that has just been fused from two smaller ones, but again, it is very exaggerated and simplified to make the effect visible. N would be the the fused nucleus inside its bubble (so the circle indicates the size of the bubble that will be changed when the spheres come closer), Sp is one of the surrounding spheres. Of course this is only happening within a small portion of the "Hull" of the nucleus, or of the outer boundary of the bubble. And it would be split among all the surrounding spheres. The distance to the spheres is relative to the binding energy so this can be compared to the mass, and we see a change that is about 1% there (Mass Defect). So this effect should be seen as working within 1% of the volume of the bubble. But we have seen that this needs to be doubled, so the range would be 2%.



2 = Expansion of the Universe

With fission we would see a similar effect on the fission parts, because it is a reaction to an imbalance in both cases. But the origin is different. With fusion we have an increase in potential energy (mass closer to the spheres), which is a compression effect leading to the universe expansion, and with fission we have a decrease in potential energy (mass further away from the spheres), which is a decompression (followed by universe contraction). In other words, with fusion the mass is creating the push on the universe (potential energy increase = expansion), and with fission the spheres are creating the push on the mass (potential energy decrease = contraction), which in this case is the reaction to the initial local decompression because it would of course be followed by a compression, which can be understood as a partial collapse of the bubble.



However, the amount of energy provided by the universe contraction can be transformed into kinetic energy and we know that most of it actually will be transformed into kinetic energy. Also, this picture is a simplification in the sense that the effect will be split among the fission parts, relative to the mass distribution among them.

This would be what we use in nuclear power plants, because it is just the releasing of this stored/potential energy due to universe expansion. So there is a fundamental difference between fusion and fission: In the case of fission this leads to a reduction of universe size as it would have to adapt. This change is partially transmitted to dark matter by this rearrangement that we call radiation while a large part of it is absorbed in kinetic energy because as the universe is getting smaller it therefore creates a push on the fission parts, like a compressed spring being partly released, transforming much of the connected energy to kinetic energy (while in case of fusion the tension of the spring would initially be increased, until the universe size adapts).

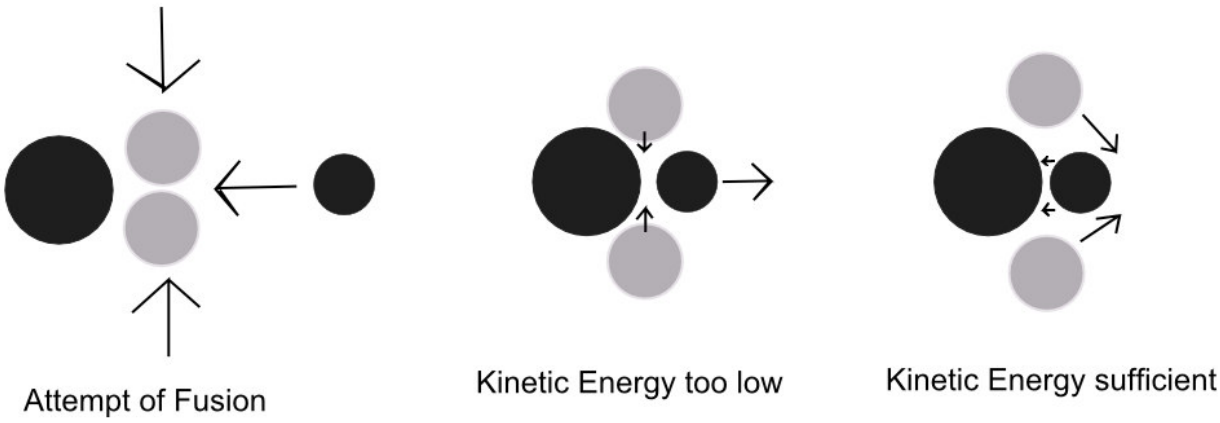
When we look at the sun we are perceiving the change in universe structure (volume increase) based on fusion, the forming of larger nuclei, that is transmitted to the outer boundary of the universe (creating light). The difference would be that in nuclear fission space is crashing in on the particles (leading to a push on the fission parts -> kinetic energy -> temperature) and in the case of fusion, like in the sun, space would be pushed away. So there would not be as much transformation directly into kinetic energy but it would mainly be vibration of space due to the universe adapting (but this will affect the nuclei again, leading to kinetic energy (temperature) but lacking the strong push that is affecting the fission parts in nuclear fission). To me this is the most convincing currently possible proof of this theory as this strong push on the fission parts is a fact and is not observed with fusion. It has not yet been explained and to me this explanation makes a lot of sense. So this is the main prediction that I can make:

The universe expands relative to the change in Mass in fusion reactions and contracts relative to the change in Mass in fission reactions.

This can be connected to the increasing speed of the expansion effect by assuming that we are currently in a mass accumulation phase where the energy (=vibration) in the grid will at some point reach a maximum due to the rate of fusion reactions reaching a maximum and then decrease (due to the bubbles having reached their maximum size that can be achieved in usual energy conditions). However, this prediction can only be accurately measured and proven if the amount of mass in the universe does not undergo significant changes. It is also necessary to note that while this energy that is coming from the parameter change can be absorbed and transformed, it will ultimately disperse and reach dark matter and work towards expansion or contraction. We have assumed that the amount of mass is constant so the absorption rate can also be assumed to be more or less constant, which means the expansion is still relative to the rate of fusion, the effect will just be slowed. The same would be true for the contraction effect (which is almost non-existent).

There is a widely accepted misconception about fusion reactions: The current theory as to why this is requiring so much energy is to apply Coulomb's Law. But this is fundamentally wrong. First of all Coulomb's Law can only be applied to stationary elements. And this is far from provided, as it is the high kinetic energy that is the main factor to allow fusion reactions to happen. Secondly, physics would look a lot different if it would take more than 1.000.000 Kelvin to overcome the Coulomb Force between two small nuclei. And for bigger nuclei this energy will reach ridiculous amounts that only a supernova can provide. So you are telling me that it takes the force of a supernova to overcome the electromagnetic repulsion between two nuclei with 50 protons? I find this ridiculous.

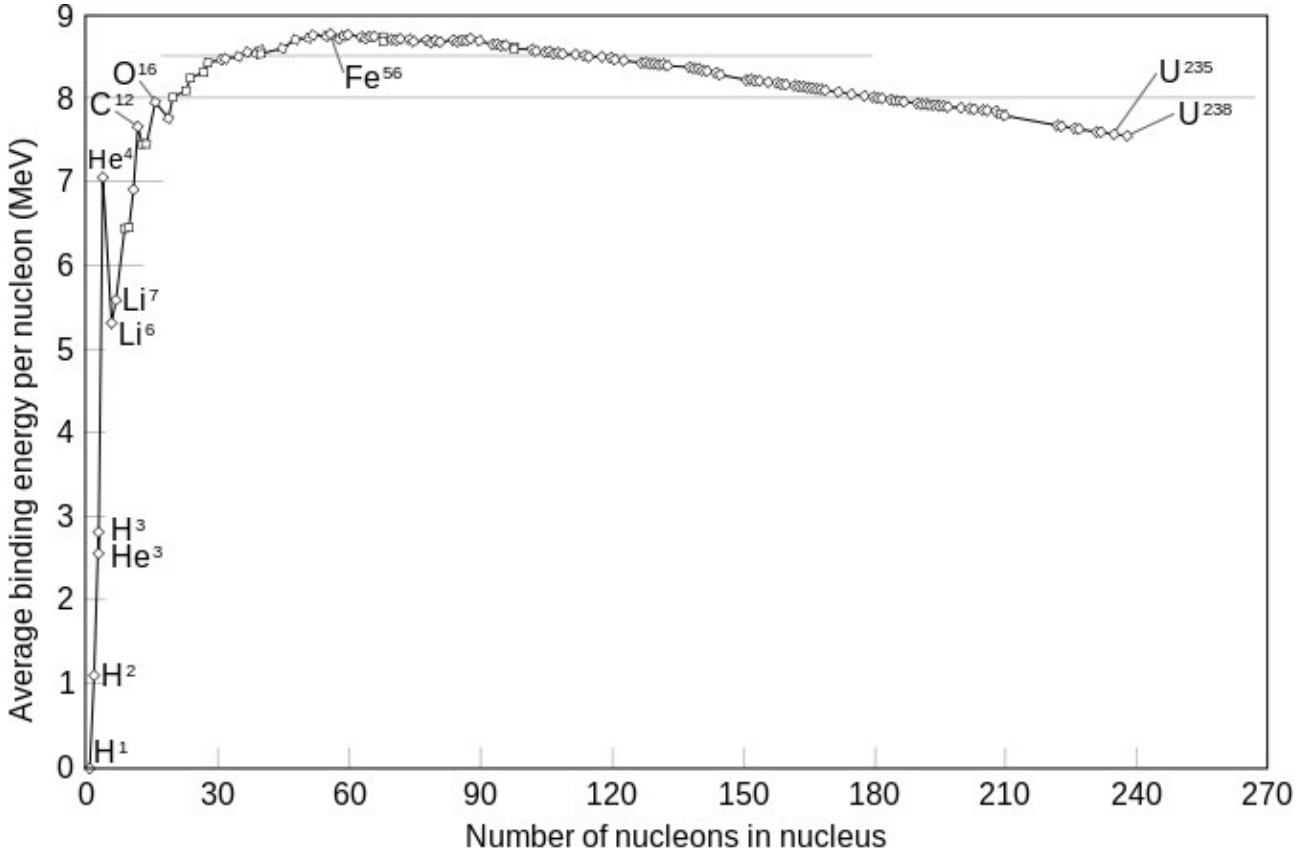
You will find any amount of energy on the curve of Coulomb's Law. This is not surprising as it goes to infinity if distance is very small. By using Coulomb's Law here you are assuming that there actually is infinite energy to be found. You assume that it is correct for even the smallest of distances. And at the same time you are assuming that the nuclear binding force is bigger than infinity, and its range would also change with nucleus size. So this explanation seems desperate to me.
Of course you would have to overcome Coulomb Force but it takes less energy to do so, and this is still not enough to fuse nuclei.
At first we have to look at the origin of the current understanding, the Coulomb Barrier. The only experimental data that we had was the amount of kinetic energy that it took to fuse nuclei. So we used this amount in Coulomb's Law which gives us a distance. The conclusion would be that this distance is the turning point where nuclear binding force overcomes the force of the interacting charges. And since it is a very "strong force" they have also defined the range of this force with this data. But this is just an interpretation. It is a convincing argument but it is not based on observations. And we can not be sure that Coulomb's Law holds at these distances.
Within this theory it is the resistance of the sphere grid towards the forming of larger bubbles due to Gravity that is the reason for the increasing amount of required energy for fusion. For allowing the forming of a larger bubble a certain amount of sphere grid volume has to be displaced by kinetic energy. When you initiate a collision of 2 nuclei you will have to apply this amount of energy to make sure that the sphere grid does not "close" the space between them again, but rather get pushed away sufficiently so that it will close "behind" the fusing nuclei, forcing the bubbles to merge. So when two nuclei collide, overcoming the "Coulomb Barrier", they would still not be fusing if the force is not strong enough to displace that amount of sphere grid volume (relative to the binding energy). They would just bounce off of each other (without electromagnetic repulsion). What we need for the fusion is the relativistic effect of movement energy. The length contraction and mass increase that is connected to movement needs to reach a certain level to open up enough space for fusion to happen.
Of course this is relative to the binding energy (which is a result of the pressure surrounding the nucleus, with Gravity changing this as the nucleus size changes). This means we know something important about the sphere grid now. We know the amount of energy that is required for a certain amount of displacement (=size increase). This is similar to the Bulk Modulus, with the difference that the compression is happening from the inside, unlike the definition of the Bulk Modulus that is the ratio of pressure increase (from outside) to volume decrease. But I believe we can still use these values to approximate the properties of the sphere grid and dark matter, and judge the validity of this theory. The amount of kinetic energy needed for fusion to happen would be relative to amount of displaced space, the binding energy, the universe expansion, or Mass Defect.



The kinetic energy can also be too great, which means that the nuclei would again only bounce off of each other.
We can also conclude that kinetic energy will be absorbed in the process, which is equal to a cooldown. This would be one factor that is so troublesome about maintaining a fusion reaction. To be more precise, the cooldown is the result of a conversion of kinetic energy into radiation energy, ignoring the particles with insignificant mass. But once you have enough output energy to compensate for the loss of kinetic energy it would be stable again. Reaching this point will prove to be tricky.

In conclusion the radiation of the sun is initially not produced by heat, but by the rearrangement of the sphere grid. But if this hits mass repeatedly it would lead to an increase in kinetic energy of mass, which is temperature increase, leading to the full spectrum of the sun, while the fusion process alone would only deliver some of the frequencies.
Both cases, fusion and fission, are fundamentally different regarding their effect on the whole grid but ultimately lead to a similar effect for us humans. There might be a chance though of seeing this difference in the radiation that is being caused.
The distribution mechanics of this radiation follow the same mathematical principle as electromagnetic radiation, the energy connected to the change in sphere grid parameters is getting distributed following the surface of a sphere, therefore decreasing with distance squared.

The optimal nucleic structure to absorb the energy applied by the sphere grid pressure (per nucleon) is found around the nucleus size of Fe56. At this size the distance from the mass to the sphere centers next to it reaches a minimum (per nucleon), and the force applied to the nucleus reaches a maximum (per nucleon). Further increases in nucleus size will now decrease the distance less than before, because the resistance to a further increase in nucleus size increases over-linear due to the pressure on the nucleus being increased by Gravity, and this effect is not based on a linear curve but on the force between the spheres, which is growing exponentially. It is a tiny influence but it will define a certain point where further increases in size will require more energy than is released by fusion.
Adding another nucleon (fusion) would require much more energy after Fe56, which is therefore the turning area of endothermic and exothermic fusion reactions. Fusion reactions yield energy due to more of SRF being used to work towards universe expansion. So we can use the ability of mass to resist the sphere grid pressure for expanding the universe with fusion.
The change in sphere grid pressure around the nucleus due to Gravity can also explain why large nuclei are usually unstable. The pressure can reach levels that can "crush" the nucleus by a sphere being able to move into it (spin is a factor) because of the lower distance between nucleus and spheres and the connected higher pressure, and maybe also the composition structure of the nucleus.



The conclusion would be that what we measure when we measure "mass" is the size of the bubble in the sphere grid while, as i have said, c^2 is depending on the density. So the energy described by the connection between mass and speed of light would also be described by the connection between the size of the bubble and the density of the sphere grid. What we are ultimately measuring there is the change in universe size, or the energy that is connected to this change. So E would be relative to the change in universe size. And this is based on the size of the bubbles as a variable (displacement -> mass) hence the Mass Defect, the part that has no mass but it has an effect and that is seen in the binding energy. But within this theory we do not need this Mass Defect. It is just the difference between the expansion that happened during the creation of mass and the expansion/contraction that is happening with fusion/fission reactions.

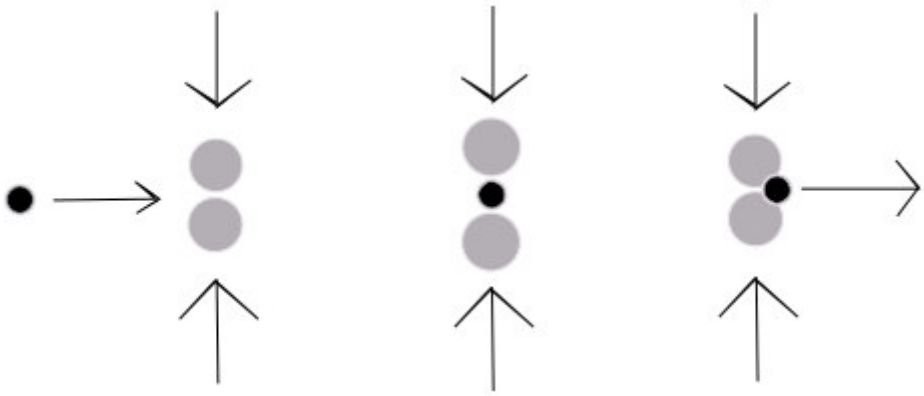
Gravity

Of course the question remains why mass is being accelerated towards mass. At this point this should be obvious. We can derive from the previous conclusions that the speed of mass relative to the sphere grid is depending on the pressure so there is an initial (minimum speed) that you would be modifying by modifying momentum, but not below minimum speed. I will explain how this works:

We have seen that what is important is the size of the opening in the sphere grid and the density of the grid. It is the same with Buoyancy: The volume of the object (=the displacement of medium) and the pressure of the medium determine the resulting force on it. This is based on density changes due to movement and the fact that the medium will always try to balance the pressure. If you move a bubble to another place in a medium the space where it was will have to be filled and the medium will have to move aside where the bubble has been moved, ergo compensating for a lower pressure where it was (this is the driving force) and compensating for a higher pressure where it has been moved (this is Inertia, leading to a "terminal velocity", but this can be increased, so calling it "minimum speed" seems more fitting to me). Of course the spheres you "push away" will not go around the object and fill the space where it was. The actual movement is small due to the obejct being part of the medium due to displacement. But there has to be some movement due to the movement of the object (relative to the volume of the object) and this essentially drives buoyancy on earth and also movement through the grid, but the latter is on a completely different energy level. And the force applied will not only be based on the volume but will have to be adjusted a little bit by the pressure, because essentially this process is a pressure equalization for which the speed of sound is relevant, and this is depending on the pressure.

We can conclude that movement relative to the sphere grid is the natural state of mass. A mass moving through a part of the grid that is at homogenous density will maintain its momentum by applying momentum energy to the sphere grid. Every "row" of spheres it would move through can be imagined as a gate that needs to be pushed open, absorbing the movement energy, but then closing again and applying the absorbed movement energy to the mass again, maintaining its speed (conservation of momentum). The push that opens the gate would be a force made of SRF plus momentum (overcoming Inertia). This absorption of the movement energy will be visible as a mass increase, a indication of how strong this push was.
The result of this would be the erratic or volatile movement on the most tiny level, that is mathematically described by the Heisenberg Uncertainty Principle. It can also be understood as quantised movement.

The mechanism that is ultimately powered by the sphere grid pressure (and in the end, dark matter) should be fairly obvious. But i will try to illustrate what I have just described by reducing the factors to a minimum. Of course this is highly exaggerated to make it more obvious.



But maintaining the exact speed would only work for a homogenous density of spheres. If mass moves towards another mass it will encounter increasing density of spheres.

The mechanism I just described would work like before with one minor difference: The momentum applied to the mass by the sphere grid is correlating with the density (or pressure) and the initial momentum of the mass. So a higher density part of the sphere grid will apply a higher momentum, causing gravitational acceleration (and the change in direction, which seems like a pulling force but it is not). But density changes are usually very small so the effects of Gravity remain very small, as long as the density difference remains small. But a few trillion of small steps will be noticeable. When measuring gravitational acceleration we are using a fixed number of spheres as distance. This leaves the change in compressibility (bulk modulus) as the driving force behind Gravity.

You can also view it as a higher minimum speed (or higher terminal speed) and this change will be added to the particle. Also the Gravity that is originating in a nucleus will affect this nucleus again in form of a pressure increase as we have seen, and this would also be added to the force. But it is just a part of our measurement (relative to displacement) so there is no correction necessary.

Of course this means that everything (mass) is always in motion, at an initial minimum speed correlating with sphere grid density, while of course allowing for the modification of speed. You are not really applying the momentum to the mass but to the sphere grid, and the sphere grid will apply this energy to the mass forever or until there are other forces working on it. This leads to the question if we can stop mass from moving at all. This might be possible under extreme conditions and it would lead to mass not being influenced by gravitational acceleration any more. But even the smallest push (overcoming Inertia) on this mass will accelerate it again, at least to the minimum speed (terminal velocity).
The initial push that lead to the movement of everything must have happened when the universe was young. It would explain why we are observing kinetic energy that can not be directly accounted for (which is the observation that has led to the assumption of the existence of "dark matter"): The sphere grid would define a minimum speed of mass relative to the sphere grid, it just needs a little push, overcoming Inertia.

As I have mentioned, a similar principle that we can observe in our reality on earth is an effect that has been used for centuries, first explained by Archimedes: Buoyancy. The downward acceleration of water can push an object upwards, depending on the amount of displaced water relative to the mass of the object (density). Therefor floating is possible. The downward accleration of water is also caused by Gravity, so in this system the structural differences (mass per volume and structural integrity) between the two observed parts would be the reason for the effect. With spheres and mass it would be the interaction force. However, there is one fundamental difference: With Buoyancy there is an acceleration of the buoyant object towards lower density areas. This is based on the downward acceleration of water molecules due to Gravity. But the sphere grid is different. There is no acceleration (of the spheres) in any direction, it is a much more rigid system that has some similarities to water but also some differences. This acceleration behaviour of bubbles due to density changes is one of those differences.
Have you ever asked yourself how a Gravity-source knows that it has to pull harder on a more massive object? It has more Inertia so to accelerate it to the same speed as a less massive object will require more energy. So if we view the gravitational field as having a certain "strength" at a certain distance this would not work the way it does.

Here the displacement helps with the explanation. Because we know that the buoyant force is depending on the displacement and the pressure of the medium. While the displacement will not be changed, outside of fusion/fission, the pressure can be changed and it will work as a factor to determine the speed, so the force = displacement * pressure, for the minimum speed.
Mass gets accelerated relative to the pressure of the sphere grid, and relative to the amount of displaced spheres. Of course in space there is no up or down, this acceleration works in all directions. But we have to take into account that in water we would have to use water molecules as the basis for distance calculation. In the sphere grid it is the dynamic compressibility that leads to the effect of Gravity, while the effect of distance increase is nullified by the use of a fixed number of spheres as a measurement of distance (Relativity). The part that remains is the change in compressibility which therefore is the basis of Gravity. So we are observing the tiny differences in compressibility of the sphere grid when we observe gravitational acceleration. In other words: Gravity is similar to Buoyancy as long as the pressure that is acting on the bubbles is factored in.

So the compression of the spheres creates a resistance to movement but this is countered by SRF plus the momentum. This leaves a little resistance to movement which we call Inertia. This would of course also be applied if you merely change the direction of the movement which is probably all you can do. But can you go slower than the minimum speed? It could be possible but you would have to directly counter the movement speed pushes that come from the sphere grid. And we know that everything in the universe follows curved paths (correlating with the gravitational fields) so the force that is supposed to slow down the particle has to dynamically change the vector at which the decelaration energy is applied. Otherwise you will merely change the direction of the particle once you brought it down to minimum speed. If you somehow manage to slow a particle down close to zero like that you will also have to apply the last bit of the energy very carefully. If you push it in the other direction with only the force that is overcoming Inertia then it will only be accelerated to the minimum speed in the other direction. So this is unrealistic. But it might be possible to measure the resistance that the sphere grid has towards going slower than minimum speed. Obviously this would have to be done in space. And you would have to first determine your position and speed relative to the sphere grid.

This also offers the conclusion that when a particle enters a part of the medium with higher density this would lead to a change in (overall) Inertia of mass but the higher energy level compensates for this effect. So Inertia does not change but the speed does. As I have said before: more available energy = more energy required. So we would measure this as a change of speed of time.

But entering a higher density part of the medium could also lead to a change in displacement due to the higher pressure working on the particle when going through a higher density part of space. Anyone familiar with hydrodynamics will know that this is a very complex problem. But the sphere grid offers the convenient (and compatible) solution that this change is completely transformed into kinetic energy, which we have seen to be possible with fission reactions. This can be based on the small incremental changes that a particle experiences due to changing densities. Those changes might be below the Inertia of the system so there will also not be a vibration effect connected to them.
All this can also mean that movement is allowed only by the existence of the spheres. Which of course would lead to the question if the definition of momentum should be reconsidered. But I have tried to use it in the traditional sense to get the idea across.

About the gravitational waves: They are also part of this theory. But I am not sure that what we have recently measured is really the result of gravitational waves because of the principle of the setup. They might have measured those waves but their explanation of how was not satisfying. In this theory you might be able to measure the increased Inertia of the grid due to gravitational waves but you would not be able to measure length changes due to Relativity. Still, the setup could detect those changes in Inertia (=changes in speed of Time) and they could be interpreted as Length changes.

Expansion of the universe

There are some ways to approach this question. But for this theory it would be essential to know if the amount of mass in our universe is stable. We have concluded that the sphere grid and the dark matter have reached an equilibrium and that the creation of mass would change this. So if we add mass (from inside) we would see a strong radiation effect connected to this. We would clearly be able to measure it. So the only non-problematic way of adding mass, in terms of balance, would be to add it from the outside. Maybe even transform dark matter into mass.

There might be other reasons, and some of the possible explanations that are current candidates for this problems would still work within this theory.

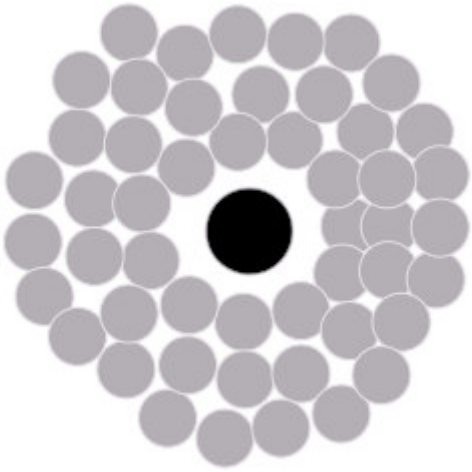
And if there is no increase in existing mass (which I think is very likely) the universe would still have to be expanding because of the forming of larger nuclei from smaller particles, the accumulation of mass (relative to Δm, as I have shown).

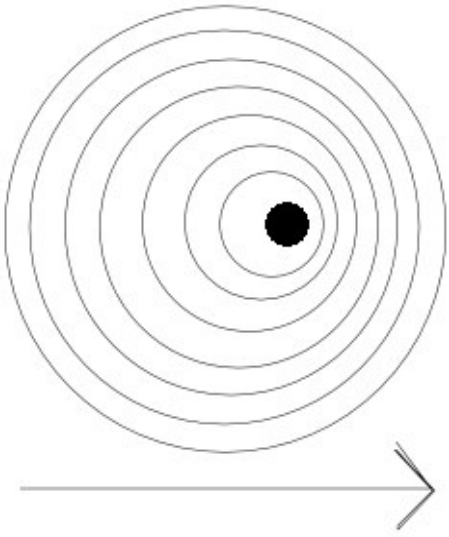
Time Dilation and Length Contraction

To me Time is a concept that is not necessary outside of our biological perception of reality. I believe Time is constructed inside our brain to make sense of reality. Time is defined as the speed of everything that is happening. From a clock ticking to radiation being emitted. All this can be cut into small pieces of Time, and we essentially tried to define these small pieces. We have come to very sophisticated ways to do that. But it all seems to be relative. So it is all connected.

The relativity of Time derives from the absolute nature of the speed of light. As I have shown the speed of light is the density of the sphere grid. So Time is relative to the density of the sphere grid. Increased density would result in a more rigid grid (higher Inertia) which would result in effects that will be seen as a change in time because everything will be affected. The assumption that Time is something universal has been proven wrong. This does not mean that the speed of Time can change but it means that Time does not exist, at least not as a universal concept.
A higher density would also reduce the size of every form of structure (compared to a frame of reference with lower density) because the connection between atoms would be influenced in a way that reduces the distance between the nuclei. Simply put, when there is more space you can store more things.
As stated above, the way that movement is happening indicates that movement energy is absorbed by the sphere grid leading to a higher compression relative to the speed. The faster you go the more movement energy will be applied to the sphere grid to help with moving aside the spheres and to apply this energy on the moving particle again, conserving momentum. This follows the observation of how much energy is necessary to accelerate a particle to near light speed in particle accelerators. When a particle moves through the grid SRF will push the spheres aside but the faster you go the closer you will get to the sphere centers in the direction you are going. In a way this is increased Inertia (in this direction). Within this theory the increase in required energy, which can be considered a increase in Inertia, is not based on a change in inertial mass. It can be interpreted this way but this would be inaccurate. There is a mass increase, because movement will increase the size of the bubble, but the increase in energy required is based on the mechanics of Inertia, and on the origin of movement energy that is SRF, which is by definition limited.

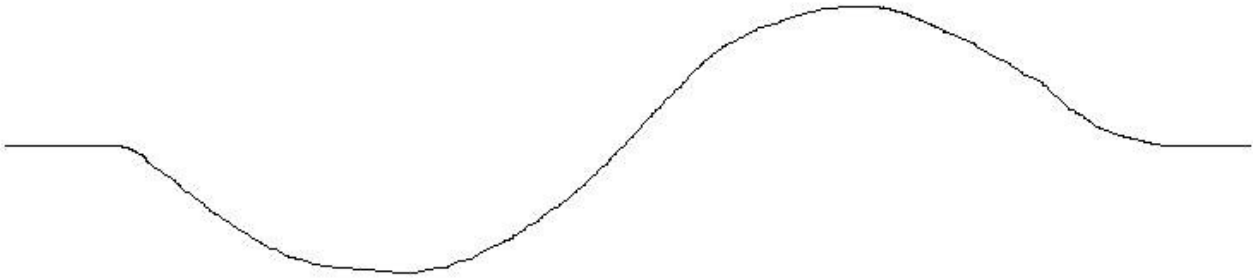
This also means that the necessary energy increases exponentially (Lorentz-Factor) and this would lead to an increase in density (that is distributed at the speed of light), which would result in length contraction (which will be nullified by relativity) and in a change of time, if observed from a lower density area, while also equally increasing the measured mass due to the increased size of the opening in the sphere grid that is caused by momentum energy. The closer it gets to the speed of light the more the bubble would assume the form of a droplet and the overall size of the bubble will be increased which is mass increase.
The compression by momentum is highest in the way you are going but this is only true very close to the mass (and compensated by Relativity). Further away this can only be measured as a change in the gravitational field that is distributed evenly with the distribution of this gravitational field, leading to the change in time (relative to the change in mass).





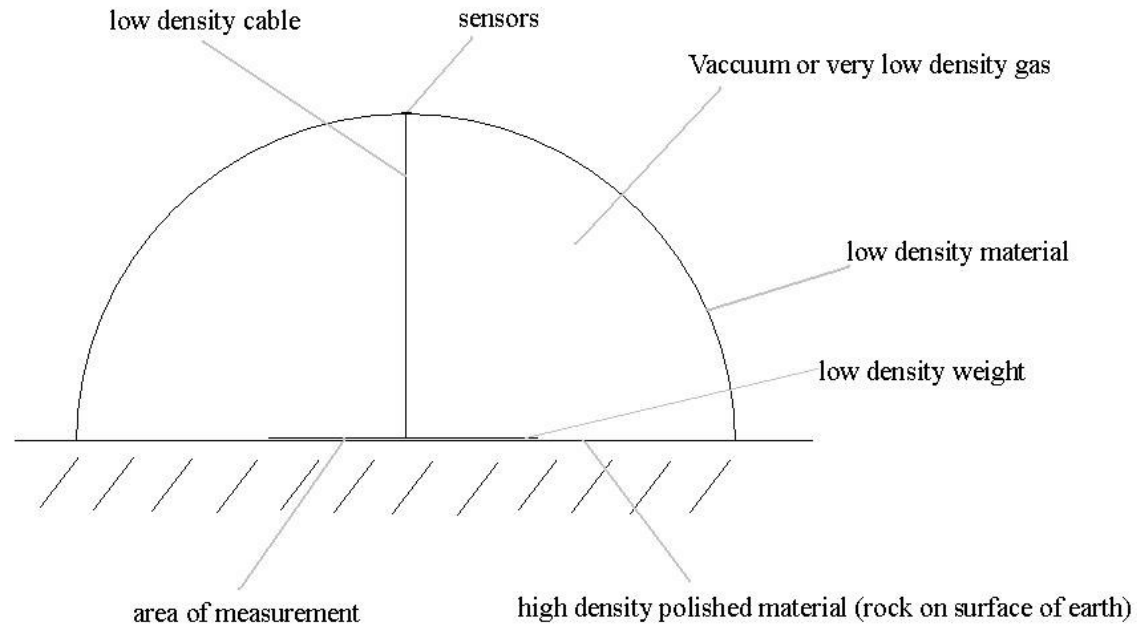
If this can be scaled up to the level of planets we could have another way of proving the existence of spheres.
The compression field that is associated with a moving object can also be understood as a wave (compression followed by decompression) and we should be able to measure this wave where high mass density changes into lower mass density, i.e. on the surface of the earth. You cannot measure this with a satellite, you have to be inside the wave, and since the earth is rotating you will only be inside it (at the right angle) for a very small amount of time, once a day. This compression would lead to a change in speed of time that is originating in the speed of the earth. We can not easily measure this due to lacking a point of reference. But we could measure this change in time as a change in Gravity and thus prove this connection. This is not the same as measuring the overall change in speed of time due to momentum, this connection has already been proven. It is the proof of the mechanics of this medium which can only be explained by this theory by scaling up a tiny effect that is predicted here.
Currently we can only predict the effect as an evenly distributed change that also affects the moving mass evenly. But if we could scale up this tiny compression effect in the direction you are going we could measure an effect that is not covered by current explanations. We could try to measure this as an increase in the change of the speed of time but it should be easier to measure this as a change of Gravity.
The principle of this effect can also be observed in any other medium, most prominently with airplanes in air. But within the sphere grid this effect would be only a portion of the effect of the mass increase due to momentum, and this effect is already very small. And we also have to take into account that it will diminish quickly over a distance which will make measuring it tricky.
If we take the picture above and think of the nucleus as planet earth we see that if we measure Gravity along the main direction vector of movement it would be different than in another direction, depending on the difference in angle. On earth we also have to take into account the rotation. So we could use a gravimeter which should be able to go as low as 10^-6N and have a measurement rate of at least 100hz. This is necessary due to it being a small effect that can only be measured in small time interval (depending on the degree of latitude) once in 24 hours, when the gravimeter measuring angle is perfectly aligned with the main direction of movement. The place of measurement on earth is also important. When said gravimeter measuring angle is aligned with the main direction of movement there should be a maximum amount of mass "behind" the gravimeter along this line. This should make sure that the effect is at its maximum at the place of measurement. For example, if the earth is moving along a vector that goes through the center of the earth and the equator we should put it right there at the equator. This place might prove challenging to find because we lack a point of reference that could tell us our main direction.

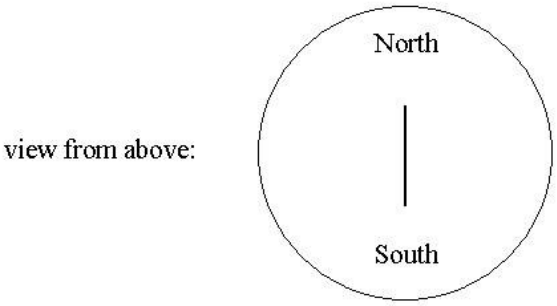
But it might be possible to calculate the vector relative to the center of the universe which should be sufficient.
I have to add that this is a long shot, but thinking of ways to prove the existence of this medium has not been as productive as I had hoped. But it is a possibility and it is also an effect that you would not notice by chance. It would be like a shift of the center of the gravitational field inside the bubbles, in the direction of movement.
The result of the Gravity measurement at the alignment of the absolute motion vector and measuring angle should look like the following wave. The motion of this wave is originated in the rotational motion of earth, so depending on the speed you will get a more stretched out or compressed measurement. And the effect would be strongest at a perfect alignment with the absolute motion vector. The further away you are from this alignment the smaller the effect will be.



But this would of course also be depending on the specifics of your measurement instrument. I can only predict a disturbance with a minimum and a maximum. This is due to the changes in the sphere grid density that are the result of the compression wave in front of the object and the gravitational field of earth interacting. The wave changes the density gradients and therefore Gravity.
If you prefer to measure this by the change in speed of Time there could still be a possibility: With Time the gradients are not important, we only have to look at the inertial property of the medium. So we would expect a slowdown of the speed of time while inside the wave (which is a compression wave). As a point of reference you could use a sensitive chronometer that is not inside the wave, but at a location that is entering the wave later.

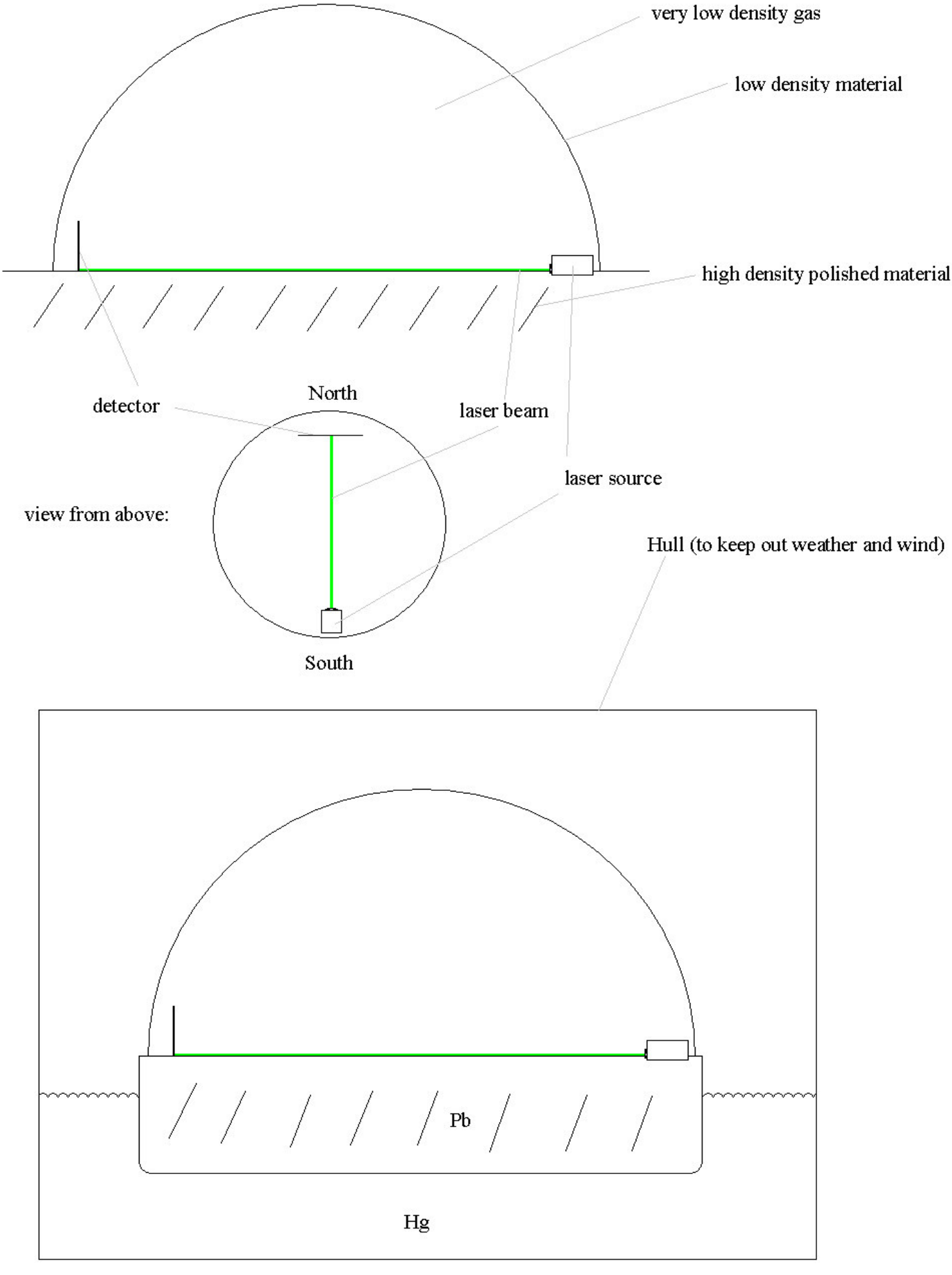
But this will be very impractical because the measurement of time can probably not be done at a low distance from the massive object, which is a requirement for this test. And by low I mean as close to zero as possible.
It all comes down to how big the effect actually is. We might have to use special methods of Gravity measurement to be able to capture this effect.
First of all we have to make sure that the measurement does not interfere with the wave. So the point of measurement needs to be kept free of a congregation of mass that would destroy the necessary gradient of mass density and therefore the connected wave. And, as mentioned, the point of measurement has to be very close to the high mass density part of setup.
The first setup I have been considering would be a simple use of a weight hanging from the top inside of a vacuum container. To increase the chances of measurement we have to use low density materials for all of this, except for the ground material. So the "weight" should ideally have almost no weight, which makes this difficult. The ideal material for the high mass density part would be a high mass density material that has layers of atoms on the exact same height level which would provide a optimally flat structure on a molecular level. Pure lead would provide such a structure. But I am not sure if technology can provide this, still Pb is a good choice for availability reasons. It would also have to be 100% horizontal (suspending in mercury is the usual "trick") and any disturbance during measurement must be eliminated, which could prove difficult. The diameter of the setup should be in the range of 1-10 meters. I do not think that you would gain much by making it any larger. The setup should be aligned with the rotational axis of earth, so by North/South I am referring to the points where the rotation axis meets the surface of earth.



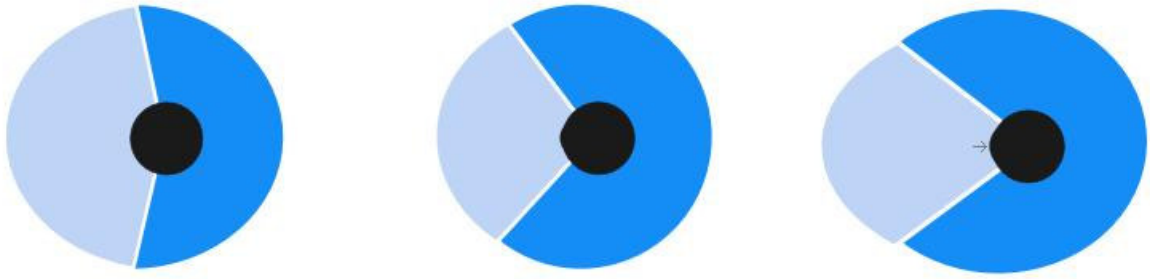


The main weakness of this setup is the distance from the high density material to the point of measurement that is defined by the weight. So I have come up with another way of measuring it. We can use a laser to measure an increase in density in a gas, and it gives us the opportunity to minimize the distance from the high density object to the point of measurement while maximizing the area of measurement. The pressure of the gas, however, will work against the measurement of the decrease of Gravity, but it should not interfere with the measurement of the increase. But we will have to expect certain fluctuations because the gas will be compensating for the effect. It will be difficult to exactly measure the effect as I have predicted it, but it should be enough to measure a fluctuation that can not be otherwise explained (and that is connected to the main direction of movement of earth). With a very low density (and low mass) gas though we could minimize fluctuations, so that only a few atoms will be interacting with the laser beam. But we have to make sure that there are enough gas atoms close to the high mass part of the setup, so there is also a limitation. This has to be balanced.

Also it might be necessary to compensate for any ground movements but Hg might be enough compensation. We still might need a dampening effect on seismic waves though. Remember, this is a tiny effect and we need precise measurement. The area where the setup would be used would have to be ideally flat, no objects of greater height than the setup within at least 100 meters (that also means no humans, unless you manage to stay below the measurement level), clear sky, no rain, no wind, no buildings (no trees) within a 100 meter radius, not anywhere close to a mountain.
The setup hast to be the highest point on the surface of earth for some distance.
There are probably better ways of proving this, but I have also considered the costs. This should be the most economically efficient way of providing evidence. If we can spend billions of dollars on particle accelerators I believe we should be able to spend a small portion of that on testing theories like this one. And by now physics should also be desperate enough for a new model to consider this one, as far fetched as it might seem.


very low density gas
low density material
high density polished material
detector
North
laser beam
laser source
view from above:
South
Hull (to keep out weather and wind)
Pb
Hg

The most difficult task will be to predict the vector for a certain time and place. It follows the "curvature of spacetime" so it will be dynamically changing. You might ask why we can not simply rotate the setup to try to find this effect with less effort. Why is this alignment needed? Because without it we only have the effect that is connected to the amount of Pb that we use in the experiment. This will not provide a sufficient change and it will also be disturbed by the gravitational field of earth, depending on the angle. However this could be done in space, far away from the gravitational field of earth. When we align the setup with the movement vector of earth we can use the setup to increase this effect. The gravitational field of earth will help with the measurement instead of disturbing it.
For better understanding have to see that any movement energy that is overcoming Inertia will create not only a compression field but also a corresponding decompression field that is of equal strength, to maintain balance. This can be used to our advantage. The compression and decompression field distribution could be visualised like this:



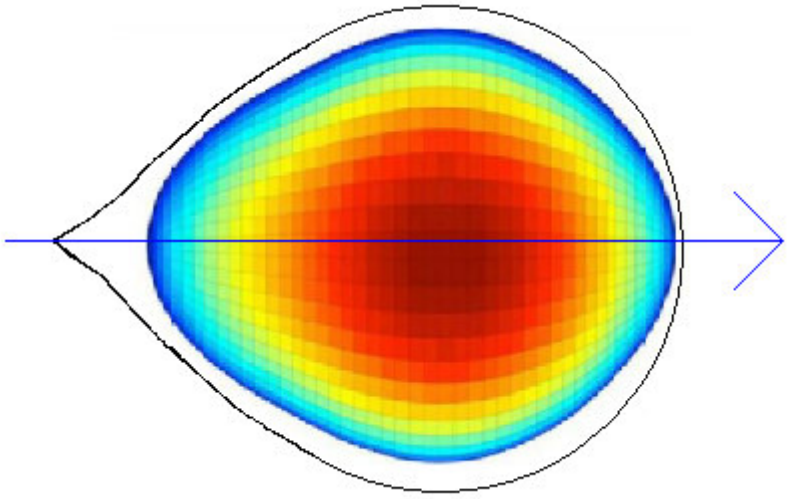
This is also only an approximation that is only supposed to show that we may have a better chance of detecting this effect in the opposite direction of movement. It shows the distribution of compression and decompression for a mass in motion. Of course the density inside those fields is not homogenous. The highest effect would be exactly on the movement vector. But since both effects are equal in strength we can conclude that the decompression effect should have a higher average intensity within that field.
The compression field will lead to an effect that we have observed by measuring a change in speed of time. So the same would be true for the decompression field. So any decrease in "speed of time" will be followed by an equal amount of increase, which raises the question why we were not able to detect it. The image might give you the wrong idea, we are talking about a very small effect here and the setup is designed to magnify it. Any mass will be creating its own field of "changed time" and due to its speed more of it will be inside the compression field than inside the decompression field. So only with this kind of setup do we have a chance of seeing this effect.

If you would try to observe the existence of the decompression field you would have to do so ideally without the use of mass, because it would create its own field and disturb measurement.
This can be scaled up to planets and offers the conclusion that in the opposite direction of movement the prediction of the vector does not have to be as precise as in the movement direction.
Obviously with a decompression field we would expect the inverse of the afore mentioned effect, maximum first, minimum second.

So we have 3 ways of approaching to find the best location for this experiment on the surface of earth.
1.) With a highly reliable vector (100% within a circle of diameter 100 kilometres) it does not matter much if we choose the compression or the decompression part of the effect. But we should have a slight advantage with the decompression effect.
2.) With a less reliable vector (100% within a circle of diameter 1000 kilometres) we should again choose the decompression effect.
3.) With a less reliable vector we should try to maximize the measurement sensitivity and just try on the "forward" half of earth. This should be easy to achieve due to rotation of earth. The movement characteristics of earth around the sun (and the sun through the galaxy) though indicate that the poles are not a good place, better to try around the equator (even Europe should be fine). If we would try to find the vector by chance however, the equator will have a disadvantage because rotational speed is at a maximum which means that the time the setup is aligned with the vector would be at a minimum. But it is possible that with a high enough sensitivity we could measure this effect even when it is at a low intensity. With a very high sensitivity we would expect a constantly changing value of Gravity (due to rotation of earth inside those fields) except maybe for an area between compression and decompression effect. So if we can measure these small changes then we can narrow down the vector by a few measurements. Since it is constantly changing we would have to use 3 sychrononised measurements at the same time on different locations so that we can construct a pattern with the results. From this we can calculate a vector.

Another possibilty would be to use results of an experiment that has recently been conducted. They have found a nucleus configuration that is shaped like a pear. It is unstable but there is a peculiar aspect about it, those pears all point in the same direction. Those pears would be the droplets that I have talked about but they would only appear as a droplet if you look at the sphere grid. If you look at the nucleus you would still see a spherical structure. This unstable nucleus (**Barium-144**) however, is a way to make this structure that is behind the nucleus visible. And this structure only allows a (unstable) pear shaped form along the vector of movement.

I have put this effect also in the previous picture so it is easier to understand. Since the nucleus is unstable we can assume that the form of the opening in the sphere grid is only marginally different from a perfect sphere, which makes a droplet-form of the nucleus unstable. Maybe only close to light speed could this be a stable configuration for a longer period of time. But the pear-shaped nucleus could also be unstable due to spin, which might explain why this is an effect that is difficult to produce.



This can be considered proof of the existence of the aether which is very likely looking like I have described. Basically we have found a compass that shows the absolute motion vector relative to the sphere grid. They just do not know what they have found. This is one of the predictions that I have made that has been proven. But for me it was not possible to think of a way to do this. It is a result that we found by chance, which can be compared to finding the first magnetic compass. It makes my approach to finding the vector almost obsolete but I will leave it here to show the thought process. If someone is still under doubt, then this result combined with the expected result of the experiment that I have described should convince even those, if the results both give the same vector.

The Double Slit Experiment

It is concievable that you can create a certain configuration of space that will allow making the existence of the spheres visible. And we have done so with the Double Slit Experiment. The sphere grid can be configured in a way that there will be paths that could be described as "probability tunnels". Some paths will be more likely than others and we see the result of this in a pattern that looks like an interference pattern. This configuration will also affect radiation in the same way. Mass and Radiation are not so different from each other.

Mass is also a part of the sphere grid, and the motion is connected to a pressure equalization wave. Furthermore, mass is also connected to a wave, which is the result of buoyancy, the equalization of pressure disturbance, which is a wave. But there should be a difference: The area of highest detection rate in the interference pattern should not be at the same place. While mass will follow a path that can not go through Sphere Centers the radiation will follow these centers. How exactly this will be apparent in the interference pattern is difficult to predict. But there should be a shift of the center, and it might be detectable.
For the Double Slit Experiment to work we apparently need some symmetry in the setup. Two interruptions in the gravitational field that combined will create those tunnels within the slits. But there would be certain restrictions arising from this interpretation. And I can not tell if those restrictions will be the same as the restrictions of the actual experiment because I am missing data on this. I can only say that it can offer an explanation of the observations of this experiment that are common knowledge (accessible via internet).
Basically the reason for this effect is also responsible for planets circling around each other. They follow a certain path that is defined by the setup of the sphere grid.
But is it likely that this effect produces a interference pattern that is not a interference pattern at all, but only looks like one? I believe it is, because we need a very precise configuration to produce this, it is not a pattern that emerges with another configuration. But as I mentioned I can not be absolutely certain about this because I am lacking data on the restrictions. For example, what would happen if you added a 3rd slit? Does it break the required symmetry? I cannot predict this at the current state of this theory.

Mathematics

You should now be able to see why this cannot be described in one consistent formula. Everything is connected and subject to a very complex system of equilibrium. The only aspect really stable is the absolute nature of speed of light, that is describing this basic universal force that ultimately powers everything.
However we can of course put all of this into a computer simulation model.

The Michelson-Morley-Experiment and the Kennedy-Thorndike-Experiment

We have defined the Speed of Light as being a constant but this is only true as long movement is not considered. The Speed of Light is currently defined by itself, by using a definition of the meter that itself relies on the constant nature of speed of light. Within that definition the speed of light would indeed be a constant, but not within this theory, as the length of a metre can be changed by movement. For this I have to use the explanation that Lorentz gave when trying to combine the results of this experiment with his aether theory: The contraction of electromagnetic fields. I am not satisified with having to use the same explanation but it is the only way that remains to explain the result of the Michelson-Morly-Experiment. The contraction of the spheres that is connected to movement would not be enough because due to Relativity the speed of light does not change, but we need a changed speed to add the results of this experiment to the theory. So we have two forms of contraction, one that is based on the sphere grid mechanics (compensated by Relativity) and one that is based on the mechanics of electromagnetic fields (not compensated by Relativity).
Lorentz did believe in an aether. His goal was to make an aether compatible with the absolute nature of the speed of light by adding Length-Contraction and Time-Dilation (Lorentz Factor). This idea proved to be true. So the aether has not been disproven by these experiments, they have just outlined the nature of the aether as something different than what people of that time have believed it to be. Lorentz has assumed an aether that is able to vibrate like the one I am describing here but he assumed that it can not be described with traditional means. I believe that we now have enough data to do what Lorentz could not.
Furthermore we need to explain the changes that led to the Kennedy-Thorndike-Experiment not being able to measure a interference pattern. Mathematically it has been solved by adding the Time Dilation that is connected to movment, following the Lorentz-Factor. This would be due to movement creating a field of higher sphere grid density which would be relative to the change in mass. There are two ways of interpreting the increased energy needed for further acceleration: A mass increase relative to the increase in energy or the increase in Inertia which does not necessarily equal a increase in mass, and in this theory the second explanation would be used. But there is still an increase in mass, relative to this effect but this would be much smaller.
So while we have a changed speed of light due to electromagnetic contraction only in the direction of movement, the changed speed of time (changed Inertia of the medium) will affect everything that is moving with that speed.

It also means that the force working against the mass increase due to movement is the same force that is working towards the closing of the hole that is maintained by mass, the same force that leads to binding energy and minimum speed, and it is indicated by the speed of light.

The remaining questions

This system allows for a lot of different effects. For example vibration of particles that affects the entire gravitational field, causing temperature. Spinning is possible due to the inhomogeneous distribution of mass within particles, or within a nucleus. Atomic bonds would be based on interacting fields of protons and electrons. Unfortunately we know very little about the electron. We have not explained what a charge would actually be, we only measure the effect it has on other particles (and their field). So I do not see a contradiction there.
The attracting effect is more difficult to imagine because we have only defined an opposing force and not many ways come to mind as to how an opposing force could allow attraction.

To me it also seems possible that the protons' effect on the sphere grid, which we call charge, is transferred to the grid by direct contact, which would mean that protons stay on the outside layer of the nucleons inside the nucleus. This is at least mathematically possible (up to about 500 nucleons, if there are more then not all protons would be able to be on the outside) if you do not apply the current understanding of the intra-nucleus forces. A charge would be describing a certain property of the sphere grid that would be originating in the particle/sphere grid interaction. Therefor a black hole would only have a small charge (charge would be limited by the surface of a nucleus that is connected to spheres).
The problem with this is that within a theory that combines the fundamental interactions there has to be a way for the protons to affect the electrons, and protons in the center of a large nucleus could not have this effect, in larger nuclei simply due to distance to the spheres. But what is our image of nucleon-organisation based on? It is based on the assumption that protons inside a nucleus would be repelling each other due to their charge so they would naturally assume positions that would maximize the distance between them. This is not necessary within this theory. I believe that our understanding of a nucleus and how it is composed and how it works is very limited and based on assumptions rather than experiments. So different approaches should be considered. It probably looks very different from what we are assuming today.

Of course many questions remain, but it is not my intention to try to answer them all theoretically. I would just like this to be discussed, so I put it out there. The main point I want to make is that space might be made up of small similiar units after all. I consider it only a first, fundamental step (and a very small one) on the path of understanding and I expect it to get heavily modified (if not disproven right away). It will have to be expanded and described in more detail to include observations like the Quantum Entanglement.
And I do not want to use more time on this because it is in a state where only experiments in (virtual) reality can help to advance this further. It might also be disproved right away so i does not make sense to me to put more work into it.

I hope this has been at least intriguing or interesting for you. I want to quote Tesla on this topic, who said: “The day science begins to study non-physical phenomena, it will make more progress in one decade than in all the previous centuries of its existence". So I believe this theory is very well worth considering. It is a concept that could work in the way I have said but of course it might not. But definitive proof or falsification can easily be achieved with little effort. And I believe this topic, the aether, should be put on top of the priority list again.

Oh, I almost forgot to mention this: Sorry. No Time Travel.