

## The cosmology of the Interspace

Vassilios Moutsoglou, Mechanical Engineer M. Sc.

[vasmou@yahoo.com](mailto:vasmou@yahoo.com)

**Abstract:** Space is not just a room, but also “something” with certain characteristics that can be ascertained by observation. Matter interacts with space, the latter exerting pressure on the former in real measurable terms. This may give an explanation to issues like gravity and the “expansion of Universe”.

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### 1. Introduction

The purpose of this paper is to introduce the notion of an “Interspace” in brief and simple terms.

A theory that would attribute characteristics to space, a theory that assumes the existence of the concept of “Interspace,” an entity that fills all space and a background that contains matter, would explain many of the questions related to the cosmology. Universal “gravity” and “time” are relative; they do not exist in absolute terms, and the relevant equations are not valid everywhere. Therefore, we cannot speak about a space-time concept.

Interspace is limited and has borders. Beyond Interspace, there is no space that can hold matter. Interspace covers all the space except for the volume occupied by the particles of matter.

The sum of the total mass and energy of the universe must be zero; it can not emanate from nothing. As obviously this is not the case with our universe, the known universe must be part of another, greater universe, probably in another dimension, where this total sum will be zero. The known universe can be represented, with the abstraction of one dimension, as a surface of blotting paper floating in the next dimension, on which ink (matter) is dropped. This surface must be open at edges lost in this next dimension.

### 2. Material and Methods

The method used is primarily extrapolation. Reason and physics are considered valid everywhere in the Cosmos. The main rule is considered  $E+M=0$ . All scientific achievements of the past, including rejected theories like the one on the aether were taken into consideration, but without adopting “as is.”

### 3. Results

The attributes of the Interspace are similar to a liquid with very low viscosity, however the Interspace is no matter, therefore is not a liquid; it can be compressed at a far greater scale. Matter has also

attributes originating from Interspace. Interspace warps around matter and exerts pressure to the matter that has evicted it from the volume it occupied. It resists to the pressure exerted by the matter both ways (plus or minus), and its viscosity rises at certain situations.

The “ambient” pressure of Interspace is greater at its theoretical centre, and less near the theoretical “external borders”. This theoretical centre, is the presumed “point(s)” of entrance of matter in the known space during the single or multiple, violent or smooth “Big Bang” type of occurrences, pushing away the Interspace, a fact that resulted in its compression, and consequently to the increase of its pressure in relation to remote points. The “pressure” here has the meaning of exerting force to matter, as a means of affecting it.

The pressure difference between the hypothetical centre and the periphery of Interspace drives the galaxies to move away from this hypothetical centre towards the hypothetical periphery, its “surface”.

This fact can be compared to the buoyancy exerted in the liquids. Because of the constant force exerted, there is an accelerated «expansion of Universe». Interspace, i.e. space itself, does not expand. If space expanded, the movement of the galaxies away from the earth would not produce the Doppler Effect. Red shift happens only if a body moves in relation to the space; if the space itself expanded, there would be no observable movement.

The said expansion of the Universe, i.e. the increment of the distance among the galaxies, is the result of the difference in pressure driving away masses from the theoretical centre of the universe which is not, and never been a specific point.

Voyages among galaxies will present an additional complication, as Interspace will continuously drive away the spacecrafts and consequently they would need huge amounts of energy to retain their course. Intergalactic voyages, in the case that the spacecraft will not be subsumed to

the system of the galaxy that keeps it steady, will have the same problem. However, the incorporation of the spacecraft to the system of the galaxy will also obstruct its course.

Interspace “flows” around matter almost freely at low velocities because of its low viscosity, and consequently allows the movement of matter inside it without the consumption of energy. At very high speeds of matter in relation to the rather “steady” Interspace the viscosity factor takes effect, the Interspace does not flow freely, and imposes resistance to the point of barring movement at the velocity of light in relation to Interspace. At such a velocity, the viscosity of Interspace drives the electrons to move at a slower speed and time slows down. The viscosity of Interspace effects the movement of the electrons and consequently the time and dimensions of matter. At the region of its centre, the viscosity of Interspace is bigger because of the pressure. The viscosity of Interspace also increases inside or near very big masses such as black holes, because of the deformation of Interspace and the pressure exerted. Time there, flows slower.

Interspace resists the fluctuation of the pressure exerted to it at the direction of the movement of matter, and it correspondently compresses or decompresses slightly when there is acceleration or deceleration. Inertia is independent of the existence of any other matter in the vicinity, as matter interacts with Interspace.

The pressure exerted by Interspace on matter is not the same in all directions. If at a direction, there is other matter nearby therefore absence of Interspace, the pressure of the Interspace is reduced and the external pressure exerted on the two masses pushes them towards each other, giving the impression that there is attraction between them. Because of the special apprehension regarding the people, the Earth and falling apples, this phenomenon was denoted as gravity. Interspace drives the apple towards the Earth and the Earth towards the apple, impeding the same time the Earth to move visibly.

These two attributes of Interspace, inertia and gravity, produce the satellite effect through the centrifugal power that retains the stars in the galaxies in place, whereas the galaxies move away from each

other because of the pressure difference in the Interspace.

Interspace, unlike the behaviour of matter, allows the transmission of the electromagnetic waves. Interspace also transmits gravitational waves produced by violent movements, resulting from the collision of great masses. The magnitude of those waves depends on the size of the colliding masses and the collision velocity. Heat does not seem to affect the Interspace or its viscosity, as does not affect the speed of light.

The pressure and viscosity of Interspace are not the same everywhere in the universe as they depend to the magnitude of mass in the vicinity and its velocity, as well as the distance to its theoretical centre. The magnitudes in physics are not the same in the totality of the Universe, and they are partially defined by the pressure exerted on matter by Interspace and its viscosity.

#### 4. Discussions

This theory explains the “expansion of the universe” without the need to resort to vague concepts such as dark energy or dark matter. It provides an explanation to the presence of gravity and almost all the results drawn from the theories of special and general relativity.

The calculations regarding mass and the velocity of distant celestial bodies as well as their distance from the earth could differ from “reality” as the “viscosity” of Interspace should also be taken into consideration.

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