

# The Truly Non-Material Source of Energy

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January 21, 2026

Abstract. If a non-material energy source were to exist, it could solve two problems in physics at once by identifying a common cause underlying the existence of dark matter and dark energy. Moreover, it could solve a third problem related to ordinary gravity, which general relativity still cannot explain.

In fact, such a non-material source of energy was described by Nikola Tesla, who called it a "primary substance." However, this insight was not embraced by the physics community and has only recently been described in a series of articles.

This article reveals the nature of the gravitational field, allowing us to understand the existence of "pure gravity" without the participation of mass at astronomical and cosmological scales. This explains the phenomena of dark matter and dark energy.

Keywords: gravitational field, Tesla, cosmological scale, vortex particle, primary substance, dark matter, dark energy, pure gravity.

## 1. Introduction

Taha Sochi (Sochi, 2025) discussed problems in modern physics related to dark matter and dark energy. The existence of dark matter and dark energy remains hypothetical, and their fundamental physical nature has not yet been established. These concepts were introduced primarily to reconcile observational data with the limitations of existing physical theories, such as general relativity, in explaining certain astrophysical and cosmological phenomena.

Sochi suggested that addressing these issues may require searching for laws of gravity applicable at astronomical and cosmological scales.

Despite more than five decades of intensive research, the search for a material source of dark matter and dark energy has not yielded

conclusive results. This motivates consideration of alternative approaches, including the possibility of a non-material energy source, as was suggested in the Tesla paradigm.

## 2. Tesla's paradigm

Tesla's paradigm is based on a continuous fundamental medium, described by Nikola Tesla as a "primary substance" (Tesla, 1908). Despite this substance's apparent similarity to ether, a major difference exists between them: elementary particles, atoms and molecules are stable vortices of primary substance; i.e., the latter is the material from which all matter is made.

Beyond the fundamental medium, Tesla's paradigm is based on the following insight:

The speed of a vortex wave depends on the density of the fundamental medium.

Consequently, in an inhomogeneous medium, particle vortices accelerate toward a higher density of primary substance without the participation of contact forces, solely because of the difference in the velocities of the vortex wave (Bakman, How a gravitational field accelerates particles and atoms, 2021).

Thus, when the primary substance is inhomogeneous, it is recognized as a gravitational field; however, in a homogeneous state, the primary substance is not detectable.

Mass plays an indirect role in the creation of gravity: gravity can exist without the participation of mass, as occurs in the phenomena of dark matter and dark energy (Figs. 1a and 1b).

Pablo Bueno et al. (Pablo Bueno, Pablo A. Cano, Robie A. Hennigar, 2024) coined the term "pure gravity," which implies that gravity can exist without the participation of mass.

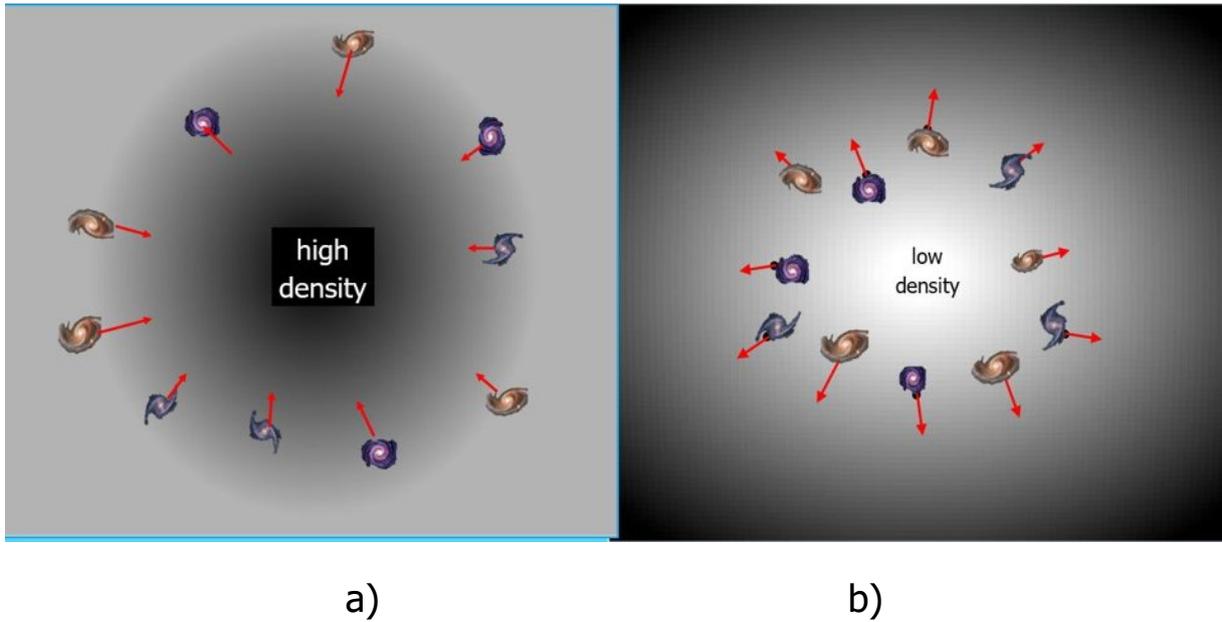


Fig. 1. The phenomenon of dark matter occurs in huge regions with a high density of primary substance (a), and a huge zone with a lower density of primary substance results in an inverse gravitational field; consequently, stars and galaxies are accelerated outward (b).

However, primary substance has the property of equalizing its density faster than the speed of light. Therefore, for small-scale phenomena, a constant supply of primary substance is necessary to maintain inhomogeneity.

Notably, the Earth's observed gravitational field is a consequence of two related processes: the Earth's mass recreates the inhomogeneity of the primary substance around itself, and the latter creates the acceleration of vortex particles (Bakman, Comparative Analysis of the New Physical Paradigm, 2024).

Because of the rapid leveling of the primary substance's inhomogeneity, without permanent regeneration, the inhomogeneity quickly disappears, thus creating the illusion that only mass can produce gravity. However, for large-scale phenomena such as dark matter and dark energy, the leveling of the primary substance's inhomogeneity requires tens of thousands of years without the participation of mass.

### 3. Energy in Tesla's paradigm

The vortex particles' resolution reveals the possibility of achieving particle acceleration without contact forces. In Tesla's paradigm, contact forces between matter and primary substance are impossible; however, primary substance has a non-material source of energy, and this energy is transferred to matter through gravitational acceleration.

In practice, the potential energy of gravity is considered in physics as ordinary energy. Thus, the energy of a non-material source is recognized as a full-fledged energy (without revealing its mechanism).

Simon Allzén (2025) presented a comprehensive survey on the history of dark matter.

Table 1 lists three gravitational phenomena, together with their scopes and durations. Although the name "dark matter" motivates a vain search for non-existent matter, I have used this term herein, albeit reluctantly, because it has become established.

Table 1. Examples of inhomogeneities in the universal medium, according to their scopes and durations (Bakman, Comparative Analysis of the New Physical Paradigm, 2024)

Phenomenon / Its scope	Inhomogeneity of the primary substance	Duration of the phenomenon
Ordinary gravitational field (e.g., solar system) / Hundreds of millions of km	High density of the medium around the Sun and planets	~ 5 minutes without permanent regeneration of the primary substance inhomogeneity
Dark matter / Hundreds of thousands of light-years	Huge zone of <u>high</u> density of the medium without permanent regeneration (Fig. 1a)	The leveling of primary substance's inhomogeneities can last tens of thousands of years
Dark energy / Hundreds of thousands of light-years	Huge zone of <u>low</u> density of the medium without permanent regeneration (Fig. 1b)	The leveling of primary substance's inhomogeneities can last tens of thousands of years

#### 4. Conclusions

Beyond the generally accepted fact that the gravitational field possesses energy, the source of this energy is now understood to be non-material. This non-material element is the fundamental medium, which Tesla called the "primary substance." When the primary substance is inhomogeneous, it is recognized as a gravitational field. It is in this state that the primary substance possesses energy.

In small-scale phenomena, the density of the non-uniform primary substance quickly equalizes, and mass is required to maintain it. This aspect explains the illusion in which gravity is impossible without mass.

However, for large-scale phenomena such as dark matter and dark energy, the leveling of the primary substance's inhomogeneity can last tens of thousands of years without the participation of mass. Calculating mass that creates accelerations in these cases is erroneous, because these accelerations are created not only by mass but mainly by the background inhomogeneity of the primary substance.

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