Review Article

A Natural Model for Dark Matter and Its Interaction with Stellar Objects such as The Galaxy Known as with Name "The Milky Way"

Francesco Pia*

Loc Riu Mannu snc, Gonnosfanadiga 09035 (SU), Italy

*Corresponding author: Francesco Pia, Loc Riu Mannu snc, Gonnosfanadiga 09035 (SU), Italy.

Abstract

In this work we will try to give a justification to two physical phenomena related to Dark Matter, one measured and one hypothesized: the first is the constant speed of the four external branches of our galaxy "The Milky Way" and the second is the hypothetical presence of matter called "dark" or rather Dark Mater and this name derives from the fact that we are not able to see it with current telescopes or other tools. These two aspects of our work are related through the natural observation of the water cycle in the earth. This fact is, let's say, an approach, this model, certainly classic because it refers to an almost bucolic vision of rain to a theory of the infinitesimally small which is certainly not classical. Then we relate the presence of matter smaller than a hydrogen atom that is not visible as well as not visible to the naked eye, for example, air; and instead we see the rain falling at a "constant" speed. This is the model described in the present work, and it is mainly based on a simple proportion that relates the average size of the atmospheric molecular radius to the average size of the rain water droplet radius, therefore it is assumed equal to a ratio with the average radius of which it is approximately constituted (which is the smallest object observable with current instruments) compared to an average radius of the unknown constituent that we cannot see and which would have the dimensions of the elements that constitute Dark Matter; therefore the ratio between two measurable average radii of rain and air (classical measure) is set equal to the ratio of two radii of the main constituent of our galaxy "The Milky Way" and of dark matter. This is obviously a rough measurement that can be made for the model presented in the present work, in which different considerations surrounding the hypotheses used will also be presented.

Keywords: Nitrogen, Sun, Andromeda, Air, Rain, Periodic tabled, Plank, String

Introduction

In this work we propose the examination of the state of health of our galaxy "The Milky Way", current state, taking a look at the presumed and future collision with Andromeda [1-10], a known galaxy approaching ours; collision estimated to take about four billion years. The first aspect of the controversial phenomenon is the constant velocity of the outer branches of the Milky Way and the presence of Dark Matter right in the area where our solar system is located. In particular in the area of the four branches that are moving away from the centre of the spiral that tend to open up are subjects from the presence of dark matter which in the present work is considered as made up of elements, which interact gravitationally, of which an estimate of the size of the objects will be given which presumably compose it.

Schemes Used

To make these observations, the "bucolic observational" method of rain falling from the sky was used, therefore a certain physical behavior is estimated. Dark matter at the moment is a very important element, even if we say the points discussed in the present work are different and the most important is the approach of Andromeda

to us, and to avoid the collision we propose the realization of what is present in the bibliography [5] or the magnetic monopole proposed as a useful device for anti-gravity studies.

Approximation

In the following we will proceed to approximate the linear dimensions of the terrestrial and galactic objects involved in the present work.

The first approximation concerns the composition of the air that makes up the earth's atmosphere, in the following table the composition just mentioned: (Table 1)

Table 1: This table shows the composition of the dry air present in the earth's atmosphere [16].

Dry air composition					
Name	Formula	Proportion or mole fraction	% (m/m)	Van der Waals radius	Medium diameter
Nitrogen	N_2	78,1%	75,4%	155 pm	310 pm
Oxygen	O_2	20,95%	23%	152 pm	304 pm
Argon	Ar	0,9%	1,4%	188 pm	188 pm

To calculate just said, i.e., the ***mAD=mean Air Diameter***, the following equation will be used (1):

(1) mAD

$$= \frac{75,4}{100} \cdot N_2 D + \frac{23}{100} \cdot O_2 D + \frac{0,9}{100} \cdot ArD = 0,754 \cdot 310 + 0,23 \cdot 304 + 0,009 \cdot 188 = 305,35 [pm]$$

An important approximation is represented by the drop of water present in the rain which is present in the earth's water cycle visible in the figure (Figure 1) for which an average diameter of three millimetres was chosen, visible in equation (2) shown below:

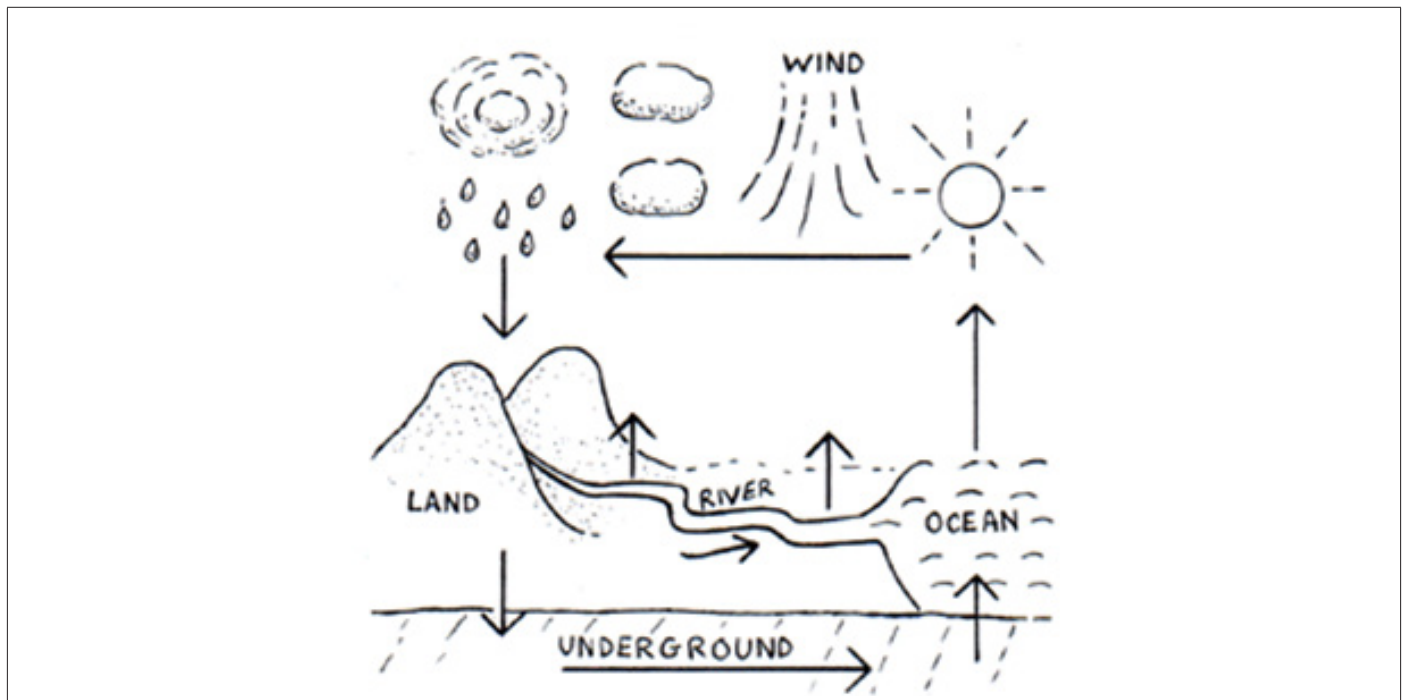(2) mRD $mRD = 3[mm]$ (mean rain Diameter = 3[mm])

Figure 1: This figure schematically shows the water cycle on planet earth, ours [17].

With regard to "The Milk Way", an average composition of the diameter of the elements constituting the four outer branches of the Milky Way was chosen as a percentage, approximating the elements and percentages of the stars, such as the Sun: considered by approximation the prevailing element; then it follows: the mean radius of the atoms constituting the part of interest of our galaxy is approximated and is visible in equation (3) shown below:

mMWD: Milky Way medium diameter

(3)   **m M W D** $(mDH_1 + mDHe_1) = 75\% H + 25\% He =$

$$\frac{75}{100} \cdot 1 \cdot 120 + \frac{25}{100} \cdot 1 \cdot 280 = 160\,[pm]$$

From the previous approximations present in (1), (2) and (3) the following proportion can be set in the following equation:

$$(4) \quad \frac{mRD}{mAD} = \frac{mMWD}{mrDM} = \frac{3 \cdot 10^{-3}}{154{,}8 \cdot 10^{-12}} = \frac{252 \cdot 10^{-12}}{mrDM},$$

from which we can easily obtain the mean radius of the dark matter "**mrDM**" visible in (5) below:

$$(5) \quad mrDM = \frac{252 \cdot 10^{-12} \cdot 154{,}8 \cdot 10^{-12}}{3 \cdot 10^{-3}} = \frac{252 \cdot 154{,}8 \cdot 10^{-24}}{3 \cdot 10^{-3}} = 13003{,}2 \cdot 10^{-21} \approx 13 \cdot 10^{-24}\,[m]$$

From the comparison of (5) and the Planck length $\approx 1{,}62 \cdot 10^{-35}\,[m]$ [11-16] slightly encouraging conclusions can be drawn on the present work. An aspect linked to the various approximations carried out in this paragraph allows us to glimpse numerically a new pe-

riodic table; the latter claim can be strengthened or disproved by a scalar examination of the approximations made up to this point.

Consideration

This paragraph will describe, not only by images, where the approximations of the previous paragraph have been considered and why they are useful for the objectives of the present work.

In the foreground we must consider the "constant" speed of the water drops that fall with the rain in the earth's atmosphere as shown in the figure (Figure 1) below.

The "constant" speed is also common in the elements that make up the outer branches of the Milky Way, right where we are with our solar system, as represented in the next figure, in (Figure 2).
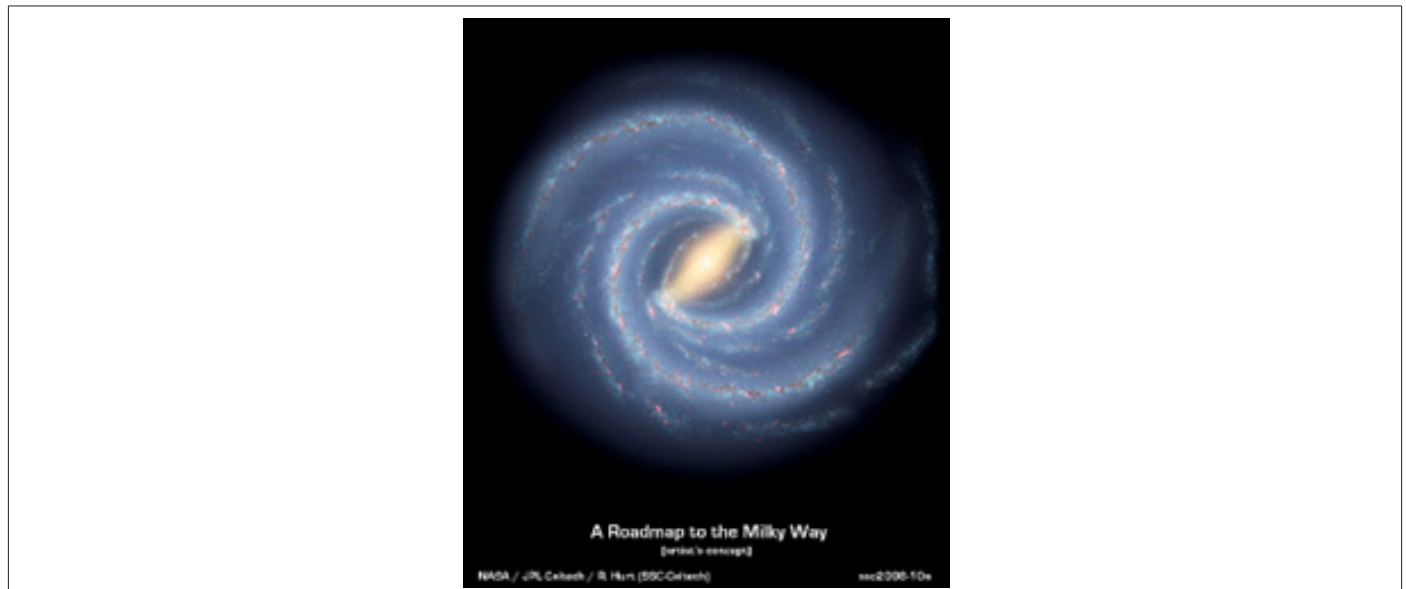

Figure 2: This figure shows our galaxy "The Milky Way" [10].

In the following figure (Figure 3), the interaction between the external branches of our galaxy and the Dark Matter with its own and hypothetical rotations is schematized.

In the figure (Figure 4) shows the speed of the external branches of our galaxy with particular emphasis on the non-constance of the direction of the speed and interaction with the Dark Matter assumed in rotation.

The paradigm, or production rule, expressed in equation (4) is as follows:

"Just as the rain descends in the earth's atmosphere (at a "constant" speed), so the outer branches of the Milky Way advance (at a "constant" speed) in the dark matter "

In fact, the term "constant" used in (4) is a weaker approximation for the outer branches of our galaxy especially in terms of direction, given the rotations indicated in the figures (Figure 3) and (Figure 4). One aspect to evaluate very carefully are the viscosity and the free body pattern of the water droplets and the gravitational interaction between the outer branches of the galaxy and the Dark Matter.
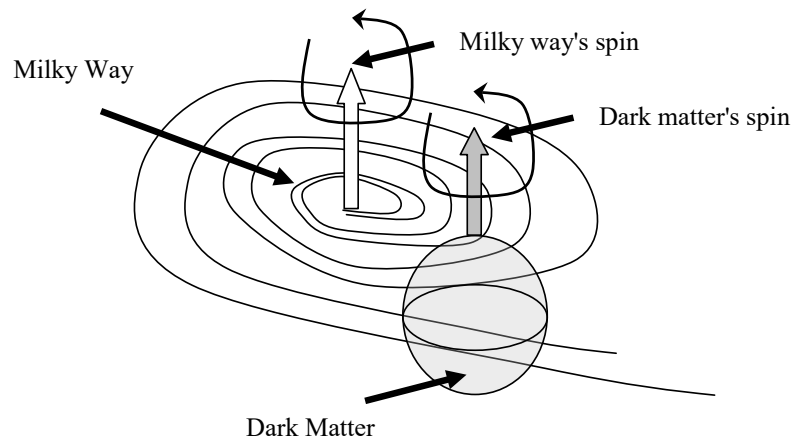
Figure 3: This figure shows, schematically, the interaction between the Milky Way and Dark Matter with the most probable directions of rotation.
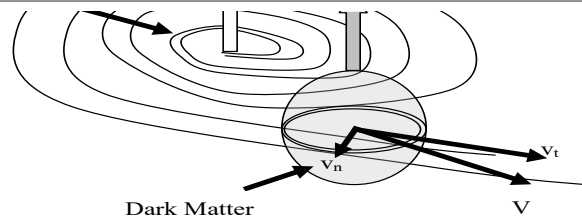

Figure 4: This figure schematically represents the interaction between the outer branches of the Milky Way and the Dark Matter with the most probable speeds indicated.

Tools and Methods

In this work we have basically used two investigative tools: the web and the imagination; the first consists of some publications and websites present in the bibliography [10,11,13-16] from which some problems related to Dark Matter have emerged, the second emerged from the author's fervid imagination represented in the figure (Figure 3) visible below.

The figure just shown highlights the general cognitive aspects that have been highlighted by a non-exhaustive, certainly ambitious self-examination; these aspects (observations and measurements) are listed below thanks to the block diagram of the previous figure, and are:

i. Observational

ii. Bucolic

iii. Quantum

iv. Imaginative

v. Historical biographic

vi. Dreamlike

vii. Transcendent between reality and surrogate reality, even in parallel

In the first six of the list just exposed, the term used also suggests the meaning and the interested reader is referred to a personal study; in the seventh point we mean one's ability to retrace the first six points autonomously but with completely personal, opportunity and even fantasy surrounding conditions. An example of a surrogate reality is for example: what if we forgot/remembered a friend (for example "Franca", or a blonde female Manager) what would have become of my observational ability and where would I have arrived? This substitution or surrogate reality is sometimes astounding if used as a model in the speculations present in this work [12].

Conclusion

The reader can draw ideas and conclusions that stimulate him suitable for the objectives or for other things. Dark matter is like a kind of atmosphere, in space, that we humans can't breathe, and it would be nice if it were. This idea was born from observing the water cycle and observing the image in figure (Figure 1) also the dark matter could be breathable one day and we need to make a comparison on the relative densities to start to understand better.

In order to avoid the collision of the galaxy "*The Milky Way*" with *Andromeda*, one could think of reducing the mass of Andromeda from the inside by realizing an adequate teleportation [1-7] and reducing the mass with [5] and closing any black holes by means of the neutron concentrator [9]: there are still four billion years left to better understand what is exposed in this work.

Acknowledgment

Appendix

The main aspect of this work is represented by a personal vision of himself that originated from the basic idea represented in figure (Figure 5). In fact, two events that participated in the surrogate reality are resurrected from memory. The first is a meeting with a student, a dark-haired girl, in the years 1991/92 in Cagliari in via Palestrina who was called Franc? and he was from Oristano. The second is a meeting with a very beautiful, blonde and American Manager; meeting that took place at the airport in Copenhagen (?) on 12-13 September 2001. Were you traveling from New York-Copenhagen Hong Kong? Bangkok I fell flat when she offered me the keys to her apartment in Manhattan and she offered to wait her for a week, I was going to Finland to study robotics.
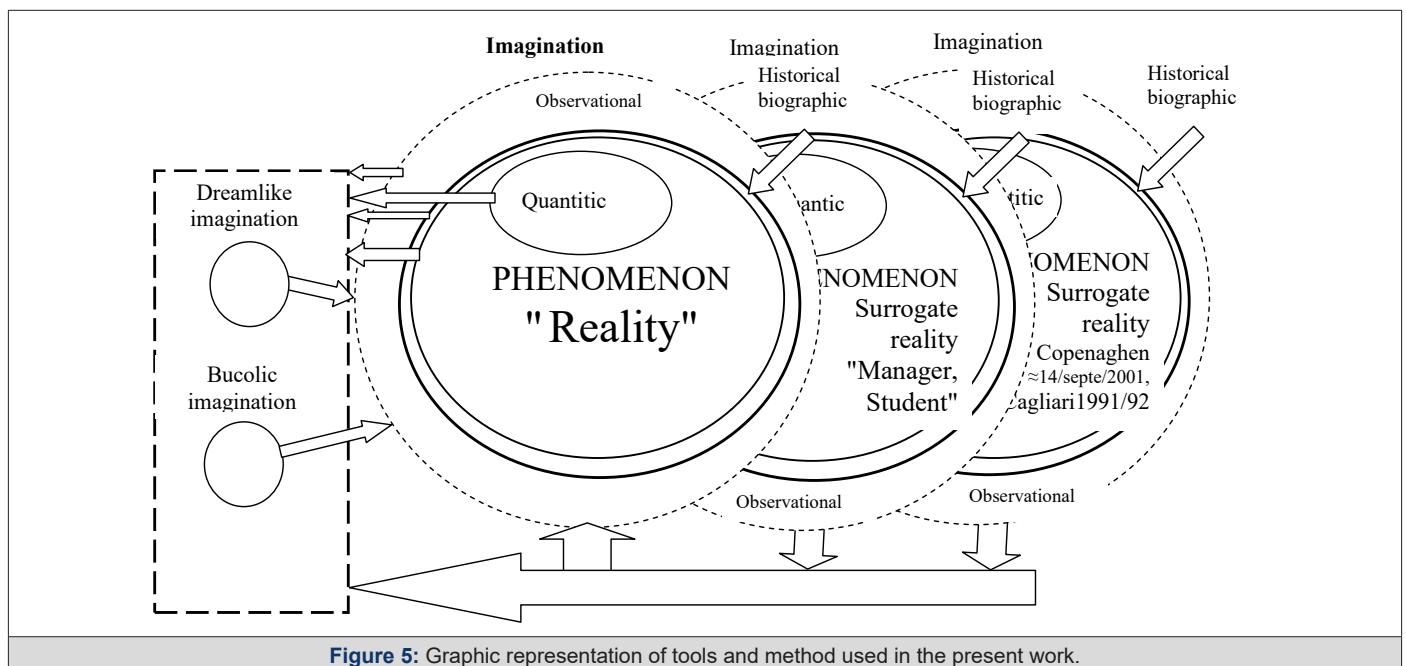

Figure 5: Graphic representation of tools and method used in the present work.

A very important aspect of the surrogate reality is that by mistake I thought that the Dark Matter was after the "kiss" collision with Andromeda and our galaxy and instead it is not true; however, if it had been true, the dark matter would have been the residue of the collision between the two galaxies and therefore a model was then devised regarding the knowledge of the dimensions of the dark matter with bucolic observations of the rain, therefore an estimate of the dimensions is obtained which they constitute it. Another important aspect is precisely the use of the surrogate reality as a reasoning model; then in the case of an error, the surrogate reality led to considerations such as one might have to slow down Andromeda's approach with [5]. So let's remember:

1. Dark matter is generated by the rubbing between the two galaxies, and it's not true because it hasn't happened yet;

2. The estimate of the minimum size, approximately, of the elements constituting the Dark Matter is given thanks to natural observations "bucolic observation";

3. So the surrogate reality is used to give an answer to something that doesn't happen, instead on the other hand it gives an answer of what is the real problem of the approach of Andromeda, four billion years in advance to realize [5].

References

1. Francesco Pia (2019) I will be back. Edn. Amazon® Kdp pp. 149.

2. Francesco Pia (2019) The liar knee. Edn. Amazon® Kdp pp. 224.

3. Francesco Pia (2019) Genetic geometry. Edn. Amazon® Kdp pp. 80.

4. Francesco Pia (2021) JEWEL: a cosmological model due to the geometrical displacement of galact objects like black, white and worm holes, ICCEA 2021: 15. International Conference on Cosmology and Extragalactic Astronomy 16(5): 28-31.

5. Francesco Pia (2022) How to Try to Get Antigravity from Electrical Circuits by an Almost Magnetic Monopole or from Anti Matter. IRJAES 7(3): 84-94.

6. Francesco Pia (2022) A Computer System Based On Neural Network And Rules System Based For Find An Optimum Mix of Vaccine and/or Drugs For mRNA Like Covid-19 Virus And Other Pathologies. IRJAES 7(2): 340-347.

7. Francesco Pia (2022) POLIFEMO: a Teleportation Model Based on Object Like Black, White and Worm Hole for Electric Signal and Object Also Thinking and With Conscience. IRJAES 7(3): 84-94.

8. Francesco Pia (2023) "A Symmetry of Cosmological Model Named Jewell That Allows Re Entry Into The Starting Parallel Universe With Adequate Teleportation Based on Creation of Useful Stellar Object Like Black, Withe Holes". ICES23(1159): 6-8.

9. Francesco Pia (2023) Neutron Concentrator, a Hypothetical Small Neutron "Star" based on the Emission of Neutrons in Minerals such as Granite and Other Commonly Available Objects. Globaljournals 23(1): 1-5.

10. Nasa web site *www.nasa.gov*.

11. Wikipedia, The free Encyclopedia *https://en.wikipedia.org/wiki/Milky_Way*.

12. *https://www.sowetanlive.co.za/news/south-africa/2023-06-27-weather-warning-for-kzn-south-coast-and-ethekwini/*

13. *https://solarsystem.nasa.gov/resources/285/the-milky-way-galaxy/*

14. *https://www.scientificamerican.com/article/a-new-map-of-the-milky-way/*

15. *https://en.wikipedia.org/wiki/Main_Page*

16. *https://ypte.org.uk/factsheets/rivers/rivers-and-the-water-cycle*