

## Some articles by Jocax

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*João Carlos Holland de Barcellos*

"Here are some links to articles I have written.

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### **The Age of Galaxies as a Determining Factor for Redshift:**

#### **An Analysis from the Perspective of the Decreasing Universe Theory**

"The Decreasing Universe (D.U.) theory proposes that the gravitational field induces a continuous contraction of space, offering an alternative explanation for cosmological redshift.

A crucial and logical deduction from this theory is that a galaxy's time of exposure to the gravitational field, i.e., its age, should directly influence the observed redshift.

Older galaxies, having accumulated more time under spatial contraction, should exhibit a smaller redshift.

This article examines this prediction, using the observed redshift difference between old (elliptical) and young (spiral) galaxies in clusters as a primary observational test for the D.U. theory."

[https://jocaxx.github.io/DUniverse/Novos/DU\\_AGE.pdf](https://jocaxx.github.io/DUniverse/Novos/DU_AGE.pdf)

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### **Analysis of Mass-Redshift Correlation in Velocity Matched Subgroups: A Rigorous Test for the Decreasing Universe Theory**

The Decreasing Universe (D.U.) theory proposes that the gravitational field induces a continuous spatial contraction, predicting that more massive galaxies should exhibit a smaller redshift at the same distance.

The main obstacle to testing this prediction is the noise introduced by the galaxies' peculiar velocities. This study applies a rigorous methodology to isolate the effect of mass by analyzing the correlation between stellar mass and redshift in galaxy subgroups with controlled distance, age, and radial velocity.

The results show that, by minimizing dynamical noise, the negative correlation predicted by the D.U. theory emerges in specific subsamples, suggesting that the intrinsic gravitational effect may be detectable.

[https://jocaxx.github.io/DUniverse/Novos/DU\\_MASS.pdf](https://jocaxx.github.io/DUniverse/Novos/DU_MASS.pdf)

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### **'The "Decreasing Universe" model: an alternative perspective to accelerated expansion'**

"The understanding of the universe's evolution has been dominated by the Standard Cosmological Model, known as  $\Lambda$ -CDM. This widely accepted model postulates the existence of dark matter and, crucially, dark energy to explain the observed accelerated expansion of the universe.<sup>1</sup> However, dark energy remains an entity of unknown and undetectable origin, presenting a significant theoretical challenge.<sup>2</sup>..."

<https://medcraveonline.com/PAIJ/PAIJ-09-00378.pdf>

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### **'Decreasing Universe: The 'Dark Matter' Effect'**

"After a brief review of the Decreasing Universe (D.U.) model, we will derive a formula and the graph for the apparent velocity of stars (of a Messier\_33 galaxy) as a function of their radial distance from the galactic center. This formula reproduces the same velocity curve traditionally attributed to dark matter. "

<https://www.wecmelive.com/open-access/decreasing-universe-the-dark-matter-effect.pdf>

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### **'The Universe, According to Jocax'**

"We will address some of the main questions regarding our Universe, such as theories about its origins, types of Universes (Virtual Universe, Parallel Universes), and questions about its finiteness, purpose, eternity, and its end."

<https://oaskpublishers.com/assets/article-pdf/the-universe-according-to-jocax.pdf>

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### **'Decreasing Universe: The CMB and the Age of the Universe'**

" We will use the "Decreasing Universe" (D.U.) theory to estimate the age of the Universe based on the average wavelength of the Cosmic Microwave Background (CMB) radiation.

<https://www.iosrjournals.org/iosr-jap/papers/Vol17-issue3/Ser-1/G1703016264.pdf>

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### **'Decreasing Universe: Redshifts and Distance Data Refute the L-CDM Mode'**

"To evaluate and compare the "Decreasing Universe theory" with the LCDM model, I created a potentially falsifiable prediction and the data was extracted and analyzed."

<https://www.wecmelive.com/open-access/decreasing-universe-redshifts-and-distance-data-refute-the-lcdm-model.pdf>

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### **'Decreasing universe: the distance as a function of redshift'**

"Using the "Decreasing Universe" model<sup>1</sup> we will show evidence that this new model of the dynamics of the Universe is less disruptive and more adequate than the traditional L-CDM model that postulates the existence of Dark Energy.

We will also develop, from this new theory, a simple and straightforward mathematical formula that provides the distance of the galaxy as a function of its redshift."

<https://medcraveonline.com/AAOAJ/AAOAJ-09-00220.pdf>

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## **'Derivation of Hubble's Law and its relation to dark energy and dark matter'**

"From the "Decreasing Universe" model,<sup>1,2</sup> establishing the contraction of space tissue When exposed to a gravitational field, we derive the Hubble Law and, from there, we will explain the effect "Dark Energy" ".

<https://medcraveonline.com/OAJMTP/OAJMTP-02-00049.pdf>

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## **'Jocaxian's Train'**

"This article presents two simple and analog situations related to classic mental experience known as "Einstein's Train", which explains the temporal dilatation regarding special relativity theory, and then it points a logical contradiction between them."

<https://www.omicsonline.org/open-access-pdfs/jocaxians-train-2476-2296-1000154.pdf>

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## **'The Equivalence Principle and the End of the Dark Energy'**

"We will make a new approach for an effect known as "Dark Energy" by an effect on gravitational field.[1] In an accelerated rocket, the dimensions of space towards movement due to „Lorentz Contraction" are on continuous reduction. Using the equivalence principle, we presume that in the gravitational field, the same thing would happen. In this implicates in „dark energy effect". The calculi show that in a 7%-contraction for each billion years would explain our observation of galaxies in accelerated separation."

[https://www.ijera.com/papers/Vol7\\_issue1/Part-1/C0701011314.pdf](https://www.ijera.com/papers/Vol7_issue1/Part-1/C0701011314.pdf)

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## **'The Gravitational Field and the Dark Energy'**

"I herein write on a new idea about cosmology that seeks to solve the dark energy and darkmatter problem by eliminating the need to postulate its existence.

[https://www.researchgate.net/publication/357878234\\_The\\_Gravitational\\_Field\\_and\\_the\\_Dark\\_Energy](https://www.researchgate.net/publication/357878234_The_Gravitational_Field_and_the_Dark_Energy)

<https://ijrdo.org/index.php/as/article/view/1311/1238>

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### **'Jocaxian's time definition'**

"Time has always been a mystery of philosophy and physics since its beginnings. We propose a new definition of time that, in addition to being objective, promotes a better understanding of this very important concept."

<https://medcraveonline.com/AAOAJ/AAOAJ-07-00165.pdf>

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### **'Jocaxian's Theorems'**

<https://medcraveonline.com/PAIJ/PAIJ-09-00387.pdf>

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### **'The Jocaxian's nothingness'**

"This article explains a theory about the origin of the laws of physics and the Universe"

<https://medcraveonline.com/AAOAJ/AAOAJ-08-00211.pdf>

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(All files : [https://jocaxx.github.io/DUniverse/Todos/Lista\\_Pdf.html](https://jocaxx.github.io/DUniverse/Todos/Lista_Pdf.html) )