A method to straighten curved space-time

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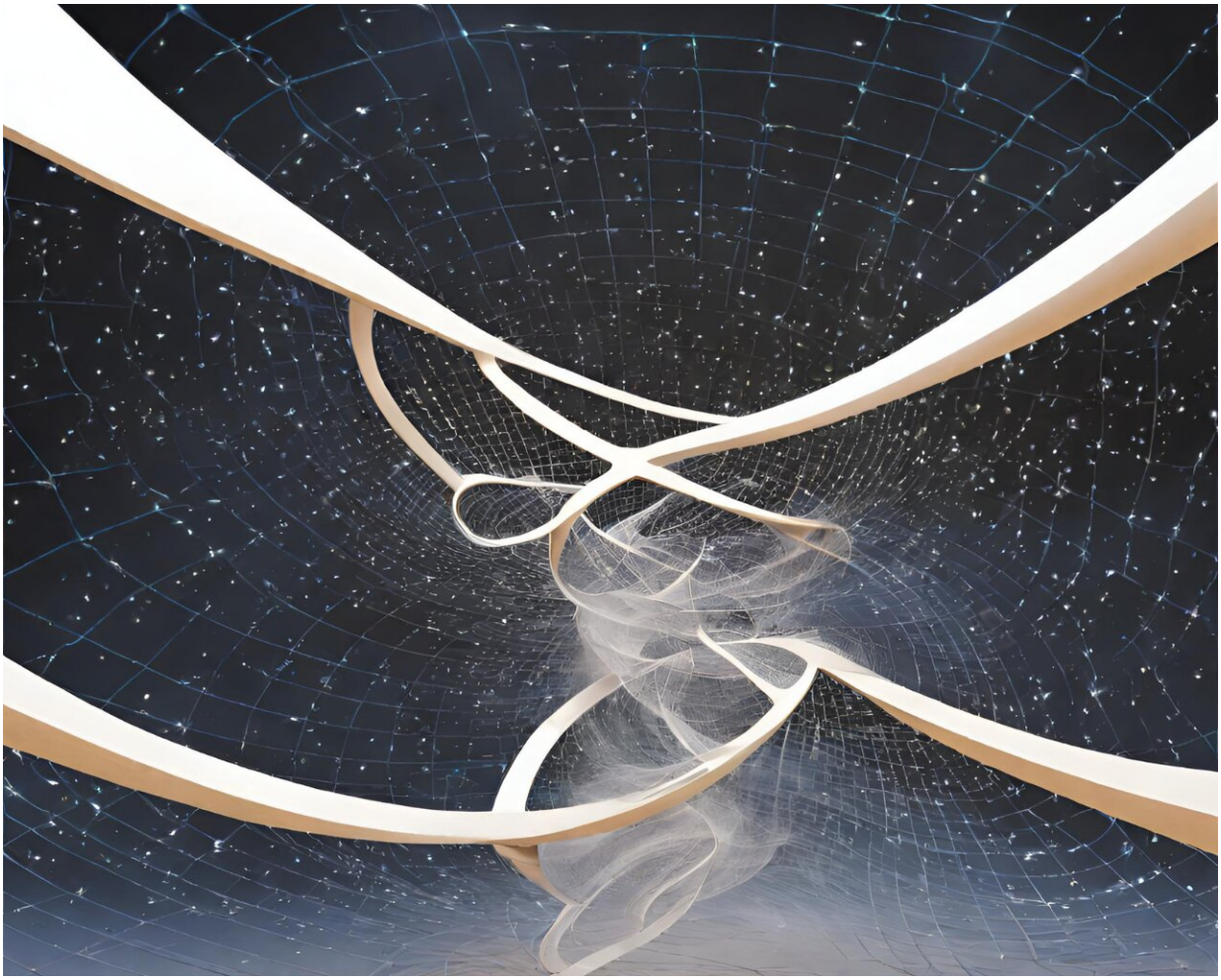

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One of the greatest challenges of modern physics is to find a coherent method for describing phenomena, on the cosmic and microscale. For

over a hundred years, to describe reality on a cosmic scale we have been using general relativity theory, which has successfully undergone repeated attempts at falsification.

Albert Einstein curved space-time to describe gravity, and despite still-open questions about dark matter or dark energy, it seems, today, to be the best method of analyzing the past and future of the universe.

To describe phenomena on the scale of atoms, we use the second great theory: quantum mechanics, which differs from general relativity in basically everything. It uses flat space-time and a completely different mathematical apparatus, and most importantly, perceives reality radically differently.

In the quantum description, the phenomena around us are only wavering probabilities of events that we can only measure with limited accuracy.

In an article, published in *Frontiers in Physics*, I managed to demonstrate that there is a method that combines the above descriptions, although it leads to quite a surprising conclusion.

Can curved space-time be straightened?

It turns out that there is a certain mathematical object called the Alena Tensor, which allows the description of physical phenomena in such a way that the curvature of space-time can be smoothly adjusted as if using a slider. In curved space-time, equation naturally transforms into Einstein Field Equations, and in flat space-time it allows the use of classical methods of relativistic physics and, most importantly, it is subject to quantum description.

So far, I have managed to demonstrate that such a space-time slider works for gravity and electromagnetism, and that the Alena Tensor

allows to add further fields. It therefore seems possible to reconcile previously contradictory descriptions for other known fields.

A side effect of using the above method is that a certain element of the equation (the field invariant) behaves like a cosmological constant in Einstein Field Equations, which may help explain the nature of dark energy. It also turns out that there must be an additional force in addition to gravity, which could help explain the nature of dark matter.

However, everything that looks beautiful has its price...

What is the universe around us?

The conclusions of the article do not mean the end of work on combining both great theories. The proposed method requires much further research and careful adjustment of field descriptions. There is certainly new hope and a promising new direction for further research, so perhaps we will soon hear about more fields aligned with the space-time slider.

However, there is a certain price associated with using the proposed method, which seems to be the biggest challenge. If the method I have developed turns out to be the right one that we have been looking for 100 years, it will also mean that the entire world around us is just a constantly waving field, and space-time itself is only a way of perceiving this field. This is the most extraordinary conclusion resulting from the equations described by Alena Tensor.

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More information: Piotr Ogonowski, Developed method: interactions

and their quantum picture, *Frontiers in Physics* (2023). DOI: 10.3389/fphy.2023.1264925. www.frontiersin.org/articles/1 … 89/fphy.2023.1264925

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