The Ultimate Modification of Einstein's Gravity

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Abstract

Satisfied all possible experimental misses of General Relativity by simple and logical modification of Einstein equations. Namely to the left hand is added besides the cosmological constant the Dark Matter tensor. Hereby the Dark Matter is not discovered as the material one, because it is the phantomic matter: just the modification of the geometry rules. Tell the others on Facebook, Twitter, etc, to make this world a better place to live and think.

PACS numbers:

I.   INTRODUCTION

Dear readers, good day and be well! Please read this short abstract of my contribution [1] and tell the others to grow my audience. Let this information be spread until the professionals will get chance to read it. Let this paper be spread among the "simple" people until the elite researches will reach it. Alongside with the philosophers I was confused, how the nature can behave according to such complex Einstein's equations, which in some cases perhaps even the numerical methods can not convincingly solve. But with the Synge argument below, which endorses the Dark Matter, this complexity is not the problem anymore. One needs just the creativity to put the nice metric of spacetime and to add the according Dark Matter to make it physical.

II.   THE RESULTS

Despite all progress in theories of modified gravity, the Einstein's original result describes flawless the actual observations. The Dark Matter and Dark Energy are not the challenges anymore, if to modify the Einstein's paper (where the Einstein's tensor $G_{\mu\nu} = 8\pi\, T_{\mu\nu}$, where $T_{\mu\nu}$ is matter tensor) simply so: $G_{\mu\nu} + \Lambda\, g_{\mu\nu} - 8\pi\, X_{\mu\nu} = 8\pi\, T_{\mu\nu}$, where on the left are geometrical terms.

In every strange situation the $X_{\mu\nu}$ is to be found from observations following way: $X_{\mu\nu} = (G_{\mu\nu}(g_{\mu\nu}) + \Lambda\, g_{\mu\nu})/(8\pi) - T_{\mu\nu}$.

What about singularities? 1) They are not observed yet, 2) Theoretician can assume singularity-free metric $g_{\mu\nu}$. One example is $ds^2 = \beta\, dt^2 - dr^2/\beta - r^2(...)$, where $\beta = 1 - 2M/(r + \epsilon)$, $r \geq 0$ and constant $\epsilon > 0$. This is called "Synge argument". Then the formula above gives the Dark Matter $X_{\mu\nu}$.

If a theoretician enjoys to calculate, to make the mind busy, he can assume the $X_{\mu\nu}$ and solve the non-linear differential equations to find the metric. For example, take the form of perfect fluid: $X^{\mu}_{\nu} = (-\rho,\, p,\, p\,,p)$. It would be just like the fluid, but without the actual fluid. One shall call it "phantomic fluid". Two fluids in head to head collision do interact non-gravitationally. But two phantomic fluids are able not having the phantomic interaction. I think, that is why no interaction is found between Dark Matter in galactic collisions, but the interaction is found inside the Dark Matter of its served galaxy [2].

Russian YouTube clip https://youtu.be/D_E9bTR2jsQ shows the phantomic gravitation, here on Earth. My theory above explains it very well: the space can be curved by no reason other than Will of Creator.

III. DISCUSSION

He: "By this you are covering all possible discoveries by the X, so no new discovery is possible. It is not acceptable: the show of Science must go on!" Me: I believe the Einstein was enlighten from Heaven with the final Truth, so his theory is final, by adding the phantomic substances into the mixture (in the Synge argument it is the so called "exotic matter"). Besides, it is the path, which is not studied by scientific community. Perhaps even Quantum effects can be reconciled with it. It is easy to do in David Bohm approach to Quantum Physics, see also the peer-reviewed journal paper [3].

IV. APPEAL TO THE READER

Your comments are welcome. Tell the others on facebook, twitter, etc, to make this world a better place to live and think. Be well, Dmitri Martila.

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[1] Dmitri Martila, "Simplest Explanation of Dark Matter and Dark Energy", 2013, LAP LAMBERT Academic Publishing, ISBN 978-3-659-50275-0 but the incomplete text is in viXra:1305.0131.

[2] David Harvey, Richard Massey, Thomas Kitching, Andy Taylor, Eric Tittley, "The nongravitational interactions of dark matter in colliding galaxy clusters", Science 347, 1462–1465 (2015); Richard Massey, et al, "The behaviour of dark matter associated with 4 bright cluster galaxies in the 10kpc core of Abell 3827", Mon. Not. R. Astron. Soc. 449, 3393 (2015), arXiv:1504.03388

[3] Dmitri Martila, On the value of David Bohm's Quantum Mechanics or Consistent Faith of a Physicist: God's Grace within Physics, International Journal of Scientific and Engineering Research, Volume 6, Issue 3, March 2015. http://www.ijser.org/research-paper-publishing-march-2015_pageU.aspx