

## "The poverty of the PRD Editorial Board"

Editor Erick J. Weinberg (Phys. Rev. D) rejected a short paper "**Goodbye, the Pseudotensor!**" <http://viXra.org/abs/1501.0173> without reviewing, but Professor Neil Cornish considered author's appeal.

This is author's comment on the Editorial Appeal DAJ1097

### "Goodbye, the Pseudotensor!"

The proper mass  $M_p$  is greater than the "gravitational mass", i.e. than the Schwarzschild parameter  $M$ .

$$M_p = \int 4\pi T_0^0 \sqrt{g_{rr}} r^2 dr > M = \int 4\pi T_0^0 r^2 dr$$

Negative gravitation binding energy  $\Phi < 0$  is added to the proper mass  $M_p$  in order to diminish the proper mass  $M_p$  up to the Schwarzschild parameter  $M$ :  $M_p + \Phi = M$ . The negative gravitation energy is represented by the pseudotensor  $t_0^0$ , So, the addition of  $t_0^0$  to  $T_0^0$  in

$M_p = \int 4\pi T_0^0 \sqrt{g_{rr}} r^2 dr$  must diminish the proper mass  $M_p$  up to the Schwarzschild parameter  $M$ . I.e. it must be

$$M_p = \int 4\pi T_0^0 \sqrt{g_{rr}} r^2 dr > J = \int 4\pi(T_0^0 + t_0^0) \sqrt{g_{rr}} r^2 dr = M = \int 4\pi T_0^0 r^2 dr.$$

But the Einstein-Eddington-Tolman's pseudotensor  $t_0^0$  is POSITIVE!  $t_0^0 > 0$ . So we have

$$J = \int 4\pi(T_0^0 + t_0^0) \sqrt{g_{rr}} r^2 dr > M_p = \int 4\pi T_0^0 \sqrt{g_{rr}} r^2 dr > M = \int 4\pi T_0^0 r^2 dr.$$

The positive pseudotensor cannot represent negative gravitation energy. So, we have to bury this pseudotensor and this concept of gravitation energy. It is simply as much as possible.

This incomprehension may be only deliberate. The purpose of Professor Neil Cornish's incomprehension is to protect prestige of Editor Erick J. Weinberg, who rejected papers on this topic without reviewing twice.

## Editorial Appeal DAJ1097 "Goodbye, the Pseudotensor!"

with author's remarks

The author considers the contribution of the gravitational pseudo tensor to the energy of an isolated system, and argues that the pseudo tensor fails to account for the negative contribution we expect from gravitational energy.

First off, the pseudo tensor is **a notoriously slippery** quantity.

**No! The pseudotensor is firm and positive. The Reviewer is slippery and negative.**

It has no invariant geometrical meaning, and can be set to zero at any point by a coordinate transformation, which is intimately related to the problem that gravitational energy can not be localized. In certain situations is possible to make some use of the pseudo tensor by averaging over regions. For example back in 1968 Isaacson showed that with an appropriate averaging scheme it was possible to develop a meaningful notion of energy and momentum for gravitational waves. For isolated systems, certain integrals of the energy-momentum pseudo tensor over space-time yield invariant results. The one place where gravitational energy is unambiguously defined is for asymptotically flat, spherically symmetric systems. The author considers isolated systems, so there is some hope of being able to arrive at meaningful results, despite the coordinate dependent nature of the pseudo tensor. Unfortunately, this turns out not to be the case. The author doesn't seem to distinguish between the different notions of mass. For simplicity, consider a spherically symmetric system. Then we have the gravitational mass

$$M = \int 4\pi T_0^0 r^2 dr \quad (1)$$

which appears in the Schwarzschild line element (here I'm using an areal radial coordinate). Then

there is the total rest mass, which would be the mass of all the components if they were distributed to infinity

$$M_{rest} = \int 4\pi\mu_0 n \sqrt{g_{rr}} r^2 dr \quad (2)$$

where  $n$  is the number density and  $\mu_0$  is the rest mass per particle. The quantities  $M_{rest}$  and  $M$  differ by contributions from the internal energy and the gravitational potential energy. Then there is

$$M_p = \int 4\pi T_0^0 \sqrt{g_{rr}} r^2 dr \quad (3)$$

which is the proper mass. The quantity  $\Phi = M - M_p$  is the negative gravitational binding energy.

The quantity that the author quotes in his equation (3) is the Komar mass, which indeed equals the gravitational mass. But to talk about gravitational binding energy you have to compare the proper mass and the gravitational mass. The quantity in the author's equation (4) has not particular meaning, and as such, I can not recommend the paper for publication.

Neil Cornish

Member of the Editorial Board

**We need neither positive pseudotensor nor slippery reviewers**

## Addition

Editor Erick J. Weinberg rejected also another paper "**Energy-momentum pseudotensor of the gravitational field is a mistake**" <http://vixra.org/abs/1308.0151> on October 11, 2013:

"This manuscript only refers to work written more than sixty years ago, and ignores the considerable relevant work since then that is related to an understanding of the issues and difficulties associated with local and global concepts of energy in gravitating systems in a (necessarily) curved spacetime"

Author's appeal was:

"All works written during the sixty years on this topic are founded on the first work by Einstein, Eddington, Tolman. All these works developed the Einstein's work, interpreted it or modernized it. In contrast, this manuscript argues that the first work is trivially invalid owing to a simple mistake, namely, a covariant component of the energy-momentum vector, instead of mass, was calculated in the work, and the component has no sense. Thus all works, which take the first work seriously, are of no interest.

Editor Erick J. Weinberg's answer was:

I have considered your comments but, I regret to say, I still conclude that your manuscript is not suitable for Physical Review D.

Editor Erick J. Weinberg rejected "**Goodbye, the pseudotensor!**" on January 27:

"Your manuscript is not suitable for Physical Review D, and is therefore rejected. No further explanation is needed, since reasons for rejection can be found in the material that you have inappropriately appended to this manuscript and to Ref. 3: "**The Truth about the Energy-Momentum Tensor and Pseudotensor**". *Gravitation and Cosmology*, 20, 4 (2014), p. 264. <http://khrapkori.wmsite.ru/ftpgetfile.php?id=132&module=files> ".

Author's appeal was:

The very short paper DAJ1097 "**Goodbye, the pseudotensor!**" was rejected by Erick J. Weinberg without a reviewing, although the paper shows that the Einstein-Eddington-Tolman's concept of gravitation energy is wrong as a whole because their pseudotensor contributes a POSITIVE term to the total energy of an isolated system, and therefore this standard pseudotensor breaks the conservation law. So the manuscript **conveys new physics**.

I suspect that the explanation of such a rejection is Erick J. Weinberg is not interested in progress in physics. His aim is to defend physics authorities from a criticism of their delusion of several years' standing. His inability to review nonstandard papers promotes the defense. Really, Erick J. Weinberg rejected a previous paper DJ11389 "**Energy-momentum pseudotensor of the gravitational field is a mistake**" without a reviewing as well and could not apprehend the objection:

"All works written during the sixty years on this topic are founded on the first work by Einstein. All these works developed the Einstein's idea, interpreted it or modernized it. In contrast, my paper argues that the first work is trivially invalid owing to a simple mistake, namely, a covariant component of the energy-momentum vector, instead of mass, was calculated in the work, and this component has no sense. Thus all works, which take the first work seriously, are of no interest".

I wrote at "Crimes of the scientific community"

<https://groups.google.com/forum/#!topic/sci.physics.relativity/ggSDryNM10A>:

"An intentional concealment of serious longstanding mistakes of physicists is a crime, because the physicists get pay, grants, *etc.*"