A SOURCE OF MISTAKES IN THE THEORY OF GRAVITATION

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In [1] I have shown, that the source of mistakes in pseudotensor theory of gravity, in particular, a source of the false statements about the energy of the gravitational field, is the incorrect application of the Gauss-Stokes theorem about the vector field flow to objects, which do not represent vector fields (although they look very much like vector fields).

For example, in the book [2] this theorem is applied to the pseudovector fields $g^{ik}\Gamma^l_{ik}$ and $g^{ik}\Gamma^l_{il}$ [2,p.353].

This is unacceptable not only from a scientific, but also from a pedagogical point of view: this book is allowed to be an university textbook for students.

"The idea for writing a textbook of this kind belongs to S.P.Novikov [2,p.11]. The authors recommend reading this book to "the young physicist-theoretician from the contemporary school, and moreover, with a certain benefit" [2,p.12]. [Taking cares about the contemporary school is very touching in this case]. Undoubtedly, the more experienced reader can profit from reading of books also of this kind.

Much more use the more experienced reader can gain from reading the paper [3]: due to papers of this kind the discussion about the gravitational field energy seems to outlast our October revolution - an event of the same age.

The paper [3] begins with the statement A:

"The notion of energy plays a central role in contemporary theoretical physics", known from school compositions. (Note here also the touching aim to contemporary reality).

The next page in paper [3] is notable for the unquestionable truth of statement B:

"The energy of the gravitational field cannot be localized, i.e. a unique energy density does not exist." (This is written in [3,p.436]; the designations - A and B belong to me, N.Ch.)

The author of the paper [3] derives the absurd statement B by applying the Gauss-Stokes theorem to a pseudovector field, composed linearly by a tensor and bilinearly by the Christoffell symbols.

Undoubtedly, by means of the incorrect application of the Gauss-Stokes, the absurd statement B can be derived, following every given in advance statement. However, as far as I could guess, it was not in the plans of the author of paper [3] to prove this statement.

REFERENCES

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