

Re: Nova / Einstein's 100th anniversary show

Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2005-10/msg00607.html>

- *From:* "Koobee Wuble" <kublai@xxxxxxx>
 - *Date:* Mon, 10 Oct 2005 22:02:07 -0700
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"Harry" <harald.vanlintel@xxxxxxx> wrote in message
[news:434a58b8\\$1@xxxxxxxxxxxxxxxxxxxxxx](news:434a58b8$1@xxxxxxxxxxxxxxxxxxxxxx)

>

> "Koobee Wuble" <kublai@xxxxxxx> wrote in message

> [news:1XK%e.17512\\$mH.10754@xxxxxxxxxxxxxx](news:1XK%e.17512$mH.10754@xxxxxxxxxxxxxx)

>>

>> <warded8@xxxxxxx> wrote in message

>> <news:1127967111.208263.122110@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>

>> >

>> > Just read about this cool new two-hour edition of NOVA, called

>> > "Einstein's Big Idea." It's supposed to be airing for the 100th

>> > anniversary of the $e=mc^2$ equation and really comprehensive. There are

>> > vivid re-enactments of Einstein and his wife, and it even goes into

>> > detail about the scientists that have preceded him, like Faraday and

>> > even those that followed him – like Lise Meitner, who ultimately came

>> > up with the nuclear fusion theory. The producer is David Bodanis, who

>> > also wrote that book "e=mc2."

>> >

>> > <http://www.pbs.org/wgbh/nova/einstein/>

>>

>> The equation, $E = m c^2$, is an absolute simple and elegant form of

>> mathematical expression that equates observed energy and the observed

> mass.

>> Before the creative interpretations to GR ever become more rampant in

> style

>> and frequency, energy actually means the observed mass, and the observed

>> mass actually means the observed energy. It is dependent on where and

>> perhaps when an observation is performed. After these creative

>> interpretations of GR became ever more ubiquitous and were deeply rooted

>> into the academics, the meaning of this equation has been downgraded into

>> just an description of the energy associated with the rest mass. To

>> describe the observed energy, the creative interpreters of GR chose to

>> promote, $E^2 = m^2 c^4 + p^2 c^2$.

>

> Not all of them, think for example of Feynman as well as other text book

> authors.

> But did you see this: Okun now attempts to prescribe what "experts should"

> do, as he deems $E=mc^2$ "wrong":

>

<http://hep.fuw.edu.pl/photon2005/backup/agenda.cern.ch/askArchive.php%3Fbase=agenda&categ=a053282&id=a053>

The so called experts cannot disprove ($E = m c^2$) wrong if ($m =$ observed or relativistic mass). Why are they promoting it?

- >> Why? Because they became disoriented when trying to write down, $E = m$
- > c^2 ,
- >> describing an object with this mass trapped in the curvature of spacetime.
- >> Why disoriented? Because of failure to follow through the powerful
- >> Noether's Theorem which states that whenever the derivative of the
- >> density
- >> function, that describes an event represents the absolute minimal effort,
- >> with respect to one of the state variables becomes null, there is a
- >> conserved quantity.
- >>
- >> In GR with Schwarzschild solution to the Grossmann/Einstein/Hilbert field
- >> equations, there are two state variables that result in conditions
- > according
- >> to Noether's Theorem. One is the conservation of angular momentum where
- > it
- >> does not take a genius to figure it out because the state variable
- >> involved
- >> is none other than the longitudinal coordinate in polar coordinate
- >> system.
- >> However, the other eludes these creative interpreters of GR, although it
- > is
- >> just there just for anyone to identify as a conserved parameter in
- >> accordance with Noether's Theorem. This state variable should be time
- >> itself whether it is the proper (or local) time or the observed (or the
- >> stuff on the right hand side of the spacetime equation with Schwarzschild
- >> metric) time. However, it is mistakenly identified as the proper
- > spacetime
- >> where it is an inner product of the proper time and the proper space.
- > Since
- >> time is only meaningful where there is a change of an event going on,
- >> space
- >> plays no role in the purpose of minimal action as described by Fermat and
- >> Lagrange long time ago. Although by minimizing these way-too-many field
- >> equations with respect to spacetime gives the same and (should be) proper
- >> answer as minimizing time (either the proper time or the observed time),
- >> there is a crucial mis-conclusion that GR in general does not manifests a
- >> conservation of [observed] energy.
- >
- > A theory that doesn't conserve energy is almost certainly erroneous.

I agree, but Hobba, Bilge, moortel, and others who cannot understand math have a lot of trouble analyzing this one. Even the ones with higher education such as Meron and the late Mr. Heymann just cannot listen to the reasoning behind the math. Meron's Lagrangian suggestion certainly reinforces the concept of ($E = m c^2$) where ($m =$ observed mass). Instead,

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Mr. Heymann just went off talking about BS, and Meron just resorted to calling me stupid. Then, I did not know how ancient these educated folks were. Now, I understand.

>> If properly done in accordance to the Lagrangian method by minimizing the
>> time, one gets a Lagrangian, although dependent on the derivative of the
>> proper spacetime with respect to time (either proper or observed), that
>> is
>> independent of the proper time itself. That means the Euler-Lagrange
>> equation associated with the partial derivative of the state variable of
>> proper spacetime becomes always zero in every general case. This means
> the
>> law of the conservation of energy is a fundamental phenomenon applying to
>> everything observable. This, of course, includes the system with binary
>> stars. Only with the skills of magicians specializing in manipulations
>> of
>> mathematics, it is shown how GR predicts the orbital frequency of some
>> binary system without the conservation of energy. Although the energy
> must
>> also be conserved in such a system, the angular momentum does not because
> it
>> does not satisfy Noether Theorem where the state variable is the
> longitude.
>> The current established observed rotational rate of some binary system
> might
>> have something to do with the lack of the conservation of angular
>> momentum
>> but certainly not because of lack of conservation of energy. A proper
>> interpretation of GR does not allow gravitons.
>
> Here you condensed material for long discussions... and I still have to
> fill
> in some "blanks".

Please do.

>> For some one interested in following up with the equation, $E = m c^2$,
>> below
>> is what is derived from the Minkowski (flat) spacetime equation.
>>
>> $E = m c^2 / \sqrt{1 - B^2}$
>>
>> Where
>>
>> ** m = rest mass
>> ** $B c$ = observed speed
>> ** $m / \sqrt{1 - B^2}$ = observed mass
>>
>> One can apply the same to the spacetime equation corrected with
> Schwarzschild
>> metric to arrive at the following.

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>> $E = m c^2 \sqrt{1 - 2U} / \sqrt{1 - B^2}$

>

> I've seen that before somewhere. At first sight that looks quite healthy,

> at

> least in approximation. Is there anyone who claims that there is

> experimental evidence against it?

I have been posting the above equation for quite sometime. However, if you have seen it before me, I would very much like to peruse it and appropriate to that prior credit.

>> Where (at latitude = 0, equatorial plane)

>>

>> $U = G M / c^2 / r$

>> $B^2 c^2 = (dr/dt)^2 / (1 - 2U)^2 + r^2 (dH/dt)^2 / (1 - 2U)$

>> $m \sqrt{1 - 2U} / \sqrt{1 - B^2} = \text{observed mass}$

>>

>> The equation above can be simplified to

>>

>> $E - m c^2 = m B^2 c^2 / 2 - m U c^2$

>>

>> Where

>>

>> $1 \gg B$

>> $1 \gg U,$

>>

>> With the conservation of energy where the change in the kinetic energy

> must

>> be the same as the change in potential energy, our solar system is super

>> stable. To explain Newtonian interpretation to gravity, we start with

> what

>> we have learned in junior high schools that

>>

>> $m B^2 c^2 / 2 = \text{kinetic energy}$

>> $- m U c^2 = \text{potential energy}$

>>

>> Yes, I re-iterate the beauty and simplicity of the equation, $E = m c^2$, if

> m

>> = observed mass. We ought to toss away the equation, $E^2 = m^2 c^4 + p^2$

>> c^2 , where it does not properly address an observed mass trapped in the

>> curvature of spacetime.

>

> For those who never had that equation, also no need to throw it away! ;-)

Amen!

> Thanks,

> Harald

No, thank you.

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- **References:**

- ◆ **Re: Nova / Einstein's 100th anniversary show**

- ◇ *From:* Koobee Wublee

- Prev by Date: **Re: MMX Expected Shft.**

- Next by Date: **Re: TomTom's stupidity (re: was always TomTom's stupidity)**

- Previous by thread: **Re: Nova / Einstein's 100th anniversary show**

- Next by thread: **Re: Ligo question**

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