Re: INERTIAL AND GRAVITATIONAL FORCES

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2008−02/msg00966.html

- *From*: "Sue..." <suzysewnshow@xxxxxxxxxxxx>

- *Date*: Fri, 8 Feb 2008 13:22:32 −0800 (PST)

On Feb 8, 3:31 pm, Stamenin <task...@xxxxxxxxxxx> wrote:

> On Feb 7, 1:37 pm, "Sue..." <suzysewns...@xxxxxxxxxxxx> wrote:
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>> On Feb 6, 2:31 pm, Stamenin <task...@xxxxxxxxxxx> wrote:
>>
>>> INERTIAL AND GRAVITATIONAL FORCES
>>>
>>> 1) In Newton theory these forces have the following
>>> mathematical
>>> expressions:
>>>
>>> Fg=kMm/r^2 (1) and,
>>>
>>> Fi=ma (2).
>>>
>>> 2) In Einstein theory is used the principle of the equivalence
>>> of
>>> these two forces.
>>> My question is, can be replaced these formulas with this
>>> principle?
>>> 2008/02/6

> Note that *time* (acceleration) is a component in the second expression

> If you mean a=d^2/dt^2 than you are right. but what changes it?

It is the only variable that can change if physical laws are assumed to be the same today as they were yesterday.
<<

−the invariance of physical systems with respect to spatial translation (in other words, that the laws of physics do not vary with locations in space) gives the law of conservation of linear momentum;

−invariance with respect to rotation gives the law of conservation of angular momentum;

−invariance with respect to time translation gives the well known law of conservation of energy

> while it does not appear in the first expression.

> The time required for interacting bodies to communicate is considered for Relativistic mechanisms while not for for Newtonian models. So they are not equivalent.

> No this time deffines the acceleration in Newtin seccond law and has nothin with interacting and comunications.

Do you have some evidence of Newton's inertial ether?

> The difference is apparent in this plausible mechanism:

> <<... at light speed, a charge ends up being back−scattered
> by such photons within a short interval of time. Their dense,
> far infrared virtual background is seemingly invisible to
> macroscopic observers at non ultra−relativistic speeds, save
> for its inertia−inducing effects. It is nonetheless felt by
> the charged oscillating microscopic constituents of matter,
> which propagate at light speed. This explains how
> momentum−energy far away induces inertia here. >>

http://arxiv.org/abs/physics/0107015

> I do not like to comment these assumptions but I can see that you do
> not understain what is an inertial force and what is the acceleration.
> The inertial force is a property of the mass, and it appears when ever
> you try to change the state of motion with v=constant (relative to an
> inertial coordinate system).

Until you detect such co−ordinate system and offer some insight
to how it interacts with matter, then magic is how you understand
inertia.

Welcome to the the 20th century:

<< Already Newton recognized that the
law of inertia is unsatisfactory
in a context so far unmentioned in this
exposition, namely that it gives no
real cause for the special physical
position of the states of motion of the
inertial frames relative to all other
states of motion. It makes the observable
material bodies responsible for the
gravitational behaviour of a material
point, yet indicates no material cause
for the inertial behaviour of the material
point but devises the cause for it
(absolute space or inertial ether). This
is not logically inadmissible although
it is unsatisfactory. For this reason
E. Mach demanded a modification of the
law of inertia in the sense that the
inertia should be interpreted as an
acceleration resistance of the bodies
against one another and not against "space".
This interpretation governs the expectation
that accelerated bodies have concordant

accelerating action in the same
sense on other bodies (acceleration induction).
This interpretation is even more
plausible according to general relativity
which eliminates the distinction between
inertial and gravitational effects.
It amounts to stipulating that, apart
from the arbitrariness governed by the
free choice of coordinates, the
gm v −field shall be completely determined
by the matter. Mach's stipulation is favoured
in general relativity by the circumstance
that acceleration induction in accordance
with the gravitational field equations really
exists, although of such slight intensity
that direct detection by mechanical experiments
is out of the question. >>
http://nobelprize.org/nobel_prizes/physics/laureates/1921/einstein−lecture.html

....and good luck in aquiring some tools of the
21st century. :−)
http://www.research.ibm.com/grape/grape_ewald.htm

Sue...

Sue

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