

Re: SR inertial frame scope

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"Rafael Valls Hidalgo-Gato" <valls@icmf.inf.cu> ha scritto nel messaggio
news:33d06fe2.0503010718.f3b6478@posting.google.com...
> "beda pietanza" <beda-pietanza@libero.it> wrote in message
news:<qNOTd.51489\$IB4.1387735@twister1.libero.it>...
>> "Rafael Valls Hidalgo-Gato" <valls@icmf.inf.cu> ha scritto nel messaggio
>> news:33d06fe2.0502211417.1ab509d1@posting.google.com...
>>> "beda pietanza" <beda-pietanza@libero.it> wrote in message
>>> news:<SkuRd.40424\$QG6.709222@twister2.libero.it>...
>>>> <valls@icmf.inf.cu> ha scritto nel messaggio
>>>> news:1108687815.924258.96140@f14g2000cwb.googlegroups.com...
>>>>>
>>>>> beda pietanza wrote:
>>>>>> "Rafael Valls Hidalgo-Gato" <valls@icmf.inf.cu> ha scritto nel
>>>>>> messaggio
>>>>>> news:33d06fe2.0502161352.7b0ac06f@posting.google.com...
>>>>>>> Newton starts his Principia...taking out all the bodies and
>>>>>>> conceiving
>>>>>>>> his absolute space and separated absolute time, the privileged
>>>>>>>> inertial frame where a single body can exist moving with
constant
>>>>>>>> velocity. Later, his three mechanical laws are valid in the
>>>>>>>> privileged
>>>>>>>> frame and in any other frame moving with constant (absolute)
>>>>>>>> velocity.
>>>>>>>> Since then this is denoted as the Galileo's Principle of
>>>>>>>> Relativity.
>>>>>>>> In 1905 the privilege is abolished by Einstein, remaining all
>>>>>>>> inertial
>>>>>>>>> frames with equal rights and the same physical laws
>>>>>>>>> (electrodynamics
>>>>>>>>> included).
>>>>>>>>> But are really completely equivalent all inertial frames? If
we
>>>>>>>>> considered their properties without the presence or influence
of
>>>>>>>>> the
>>>>>>>>>> real existing bodies, as is the case when Einstein developed

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>>>>>> *Relativity Theory in 1905, we have no reason to think that the*
>>>>>> *equivalence is not total. But if we put the bodies, with their*
>>>>> *masses*
>>>>>> *and other attributes, then I am not so sure. Why? Because*
Einstein
>>>>>> *himself starts immediatly the development of General*
Relativity,
>>>>> *with*
>>>>>> *mass–energy warping the space–time.*
>>>>>> *I am putting my attention in some very specific class of*
inertial
>>>>>> *frames, the center of mass ones for a determined set of*
bodies. It
>>>>>> *appears that this frames can be used only to describe the*
bodies
>>>>> *that*
>>>>>> *belong to the associated set, what seems very logical. I*
denoted
>>>>> *these*
>>>>>> *systems Hierarchical Inertial Systems (HIS), where the*
selected
>>>>> *body*
>>>>>> *set determines a UNIQUE inertial frame to describe them. The*
>>>>>> *Hafele&Keating experiment and the GPS results are in total*
>>>>> *agreement*
>>>>>> *with my HIS approach.*
>>>>>> *Any comment will be appreciated.*
>>>>>>
>>>>>>> *RVHG*
>>>>>>
>>>>>> *Just a brief consideration if you choose the center of mass of a*
set
>>>>> *of*
>>>>>> *objects as the origin of a frame of reference, this arbitrary*
choice
>>>>>> *has nothing to do with the distribution of the physical*
>>>>>> *charateristics*
>>>>>> *that makes the local ether:*
>>>>>> *the ether depends mainly from the local effects of distant mass.*
>>>>>>
>>>>>> *The local masses certainly participate to modify the local*
ether
>> *but*
>>>>> *the*
>>>>>> *amount of the modification due to the local masses is unknown.*
>>>>>>
>>>>>> *Therefore the center of mass of any set of objects will be*
>> *absolutely*
>>>>>> *moving versus the ether by a certain unknown amount and the*
choice
>>>>> *falls*

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>>>>> *in the same arbitrariness of any other choice.*
>>>>>
>>>>> *The SR is meant to ignore the ether and this is good enough for*
>>>>> *terrestrial*
>>>>> *speeds, this approximation is shared by all the different*
approaches
>>>>> *till we*
>>>>> *are not able to detect the ether with a sufficient precision.*
>>>>>
>>>>> *best regards*
>>>>>
>>>>> *beda pietanza*
>>>>>
>>>>> *I am not an aetherist, I accept the two postulates of 1905*
Einstein's
>>>>> *Relativity, physics laws are the same in all inertial frames*
including
>>>>> *light behavior in similar conditions*
>>
>> *I agree that a relativistic approach can be used to deal with*
"collisions
>> *like" interactions and do without the ether, nor so light behavior that*
is
>> *only a result of the synchro arrangement.*
>>
> *You must know that in today modern Quantum Theory, photons are*
> *particles that can make "collisions" with other kind of particles or*
> *among themselves. Two photons colliding can be converted in a pair*
> *electron–positron and vice versa. This takes out any privilege for*
> *light. Light velocity in a medium at a macroscopic level can be*
> *explained as a complex process of photons absorbed and emitted at the*
> *microscopic level. The vacuum light velocity can be considered as a*
> *limit for this kind of processes.*
>>>. *But I do not accept inertial*
>>>>> *frames without an associated and completely determined body set,*
>>>>> *limiting the scope of each frame to describe only the bodies that*
>>>>> *belong to it.*
>>
>> *But what is in or out of the set of bodies is arbitrary, and also*
arbitrary
>> *is to exclude the influence, always present, of the external world.*
>> *Back to light behavior, two different moving bodies–sources emit, each*
>> *of them, a pulse of light, these two pulses travel together the Space*
due to
>> *Space characteristic that are not just locally determined, actually*
these
>> *characteristic of Space is meanly determined from the external world,*
>> *except for extreme cases like black bodies.*
>>
> *Do you consider arbitrary to consider as the body set of some HIS only*
> *two particles, a proton and an electron? (Hydrogen atom model, N.Bohr,*

> 1913). Do you consider arbitrary to consider the Solar System as a
> HIS? That some entity behaves as a unique one having a simple or
> complex internal structure is a common occurrence in Nature (atoms,
> molecules, planets, stars,.). That all in Nature is related with all
> can be a great true, but totally useless to know it. Any knowledge
> obtained by men is always a partial one. The HIS is a conceptual model
> entity that you can use to model any part of Nature. Fortunately
> Nature laws seems to be the same in any HIS (PoR). That makes possible
> to know Nature without the huge problem to take into account the
> effect of all the rest of Universe in some part of it. In my HIS
> approach a light ray will have always a definite set of bodies with
> respect to move with some velocity.
>>>>
>>>> You see, you shouldn't worry about what you know that is contained
>>>> in the frame but you should worry about what is unknown and you
frame
>>>> should be capable to contain that unknown and be compatible with it.
>>>>
>>> My HIS separate a determined body set from the rest of the Universe.
>>> The scope of the HIS is limited to describe those bodies (in an
>>> increasing hierarchy Earth–Moon, Solar System, Galaxy, etc.). A body
>>> not took into account when calculating the center of mass simply do
>>> not exist in the model. I distinguish an interior from an exterior. I
>>> assume the exterior cannot influence interior relations. You can
>>> visualize that considering the exterior provoking an equal
>>> acceleration to all the bodies of an associated set (remember
>>> Einsten's free falling elevator?). Another example, we here in the
>>> Earth do not feel the acceleration owed to the Sun. For many Earth
>>> affairs the Sun does not exist, like in GPS calculations. The PoR
>>> state the compatibility with the known or unknown exterior world. The
>>> low hierarchy HIS represents a single body in a higher hierarchy HIS,
>>> with the same Physics laws applying. The PoR determines the
>>> possibility that any civilization can know the Universe starting in
>>> any place of it. Putting the "center" from Earth to Sun was simply a
>>> step going up in the hierarchy of HIS. Now we are putting attention to
>>> the black hole in the center of the Galaxy.
>>
>> This is a heuristic approach that is meant to overcome the difficulties
>> to take the entire universe into account at once.
>>
>> But what is difficult to us nature just do it. Holism is defined as a
>> emerging of higher properties out of a set of lower relations;
>> in nature Holism works in all directions from high to low levels,
>> and from low to high levels.
>>
>> The ether is a local immediate condensation of all the above, without us
>> knowing anything about the real nature of the ether, only we know
>> (have hints of) that anything that is happening here, now is affected
>> and determined by the entire universe, and the ether is the local
>> intermediary.
>>

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- > *I accept your right to make any kind of hypothesis in the effort to*
- > *know Nature. Following the scientific method, experimental evidence is*
- > *the filter to accept or refuse the freely created theories. You can*
- > *find in Physics history more than one fluid conceived to explain some*
- > *kind of phenomena. The "flogist" and the "caloric" are two*
- > *unsuccessful ones, created the first to explain oxygen interactions*
- > *before the oxygen atom discovery, and created the second to explain*
- > *the movement of heat before the knowledge that heat is in itself*
- > *"movement". I consider the aether in the same group of the flogist and*
- > *the caloric, created in order to explain the nature of light before*
- > *the knowledge about light as photons with similar attributes as others*
- > *particles.*

I think is the other way around: are the particles (and bodies) that have similar attributes as light photons, the difference is that light travel locally at C, while for matter C is the limit.

Particles (and matter cluster of particles) can be considered soliptons (standing waves) at rest or moving in the ether.

In the ether particles (soliptons) have their mass and inertia and assume according to their speed vs the ether a "potential" Kinetic energy.

The kinetic energy is the energy stored in the body in the wait to give it back to the rest of the universe, in case of lack of interaction, this kinetic energy is, in a long run, given back to the ether through a dragging down process.

- > > > *That is what the ether does. It acts locally but it is determined*
- from
- > > *the*
- > > > *action of the masses of the entire universe, so the ether is fit to*
- > > *contain*
- > > > *all possible objects, without changing much locally.*
- > > > >
- > > > *The "entire Universe" is a too complex concept. I can run indefinitely*
- > > > *up with my hierarchy of HIS without the need to manage that huge*
- > > > *problem. I do not reject the possibility that the hierarchy end in*
- > > > *some place (reaching perhaps the aether!), but I am not really worried*
- > > > *about it, I consider this out from my model.*
- > > > > *We have never two equal hierarchy HIS competing to*
- > > > > *describe the same body. All SR paradoxes disappear when we put the*
- > > *real*
- > > > > *bodies in the scene, without the need to introduce any universal*
- > > > > *aether.*
- > > > >
- > > > > *If you think there is not a ether, then SR have no paradoxes, I*
- arranged
- > > *a*
- > > > > *way to reproduce all the SR figures and affects and reciprocities in*
- > > > > *the ether (on paper).*
- > > > >
- > > > *All the time persons are discussing in this group about SR paradoxes*
- > > > *without mentioning the aether.*

> >
> > *The SR paradoxes are ruled out by the fact that SR doesn't deal with*
> > *absolute values. The paradoxes arise by the attempt of many to force*
> > *SR to predict the absolutes, that, of course, is not possible.*
> >
> > *I have a different view about what causes paradoxes in SR. For me the*
> > *original sin is the separation of space and time from the bodies (that*
> > *starts since Newton already). Einstein did the same, conceiving the*
> > *infinite equivalent inertial frames, able each one to describe the*
> > *Universe. In my approach the bodies themselves determine the UNIQUE*
> > *inertial frame that can be used to describe them, contributing each*
> > *one to the collective center of mass that fixed what the rest is. A*
> > *hierarchical rest, only valid for a specific body set. But this body*
> > *set can be as great as you want, having always the possibility to*
> > *model any part of the Universe as human knowledge grows. I refuse to*
> > *admit the dilemma "absolute" or "relative". I substitute it by an*
> > *infinite "hierarchy", that you can view as a "relative absolute",*
> > *being every time more "absolute" and less "relative" as you goes up*
> > *with the hierarchy describing a more large part of the Universe.*

While I am perfectly in agreement with you about the "relative absolute" up to the point in which I consider a good approximation to use a local inertial frame as a preferred frame (and Esynch the local clock to obtain local symmetries) and use this frame as reference for a limited set of local bodies, this cannot allow you to ignore the font of all the laws and physic behavior and attributes of the bodies (and of the local set of bodies) these comes mainly from outside.
Here are the local characteristics of the local ether that if known would tell you the exactly contribution of local effects and outer effects in determining the behavior of the local bodies.

>
> > > *Of course, I know that aetherists like*
> > > *you try to resolve them considering its existence. My way is reject*
> > > *the symmetry and reciprocity of SR frames substituting them with a*
> > > *hierarchy of HIS*
> > > > *Conclusion: SR is fully embedded in the ether, the ether SR denial*
is
> > *this a*
> > > > *true paradox: without the ether SR predictions would be impossible.*
> > > >
> > > *Length contraction and clock delay can be explained by physical*
> > > *changes in the interacting bodies taking into account the mass–energy*
> > > *relationship discovered by Einstein based in the PoR. Take a look at*
> > > *the GPS. The clocks delay can be predicted with extraordinary*
> > > *precision and used in the real life. The delay between clocks is NOT*
> > > *dependent on their relative velocities, but on their individual*
> > > *velocities and positions in a preferred inertial frame, the center of*
> > > *mass one of the bodies involved.*
> >
> > *I am afraid you are managing to adapt a SR like approach to a set of*

bodies

- > > *whose center of mass is acting as reference system, it is going to work*
- > > *approximately correctly for the same reasons that SR predictions are*
- > > *practically correct: you could put at center of mass of your set of*
- > > *bodies the ether and it would just work fine, because the ether,*
- > > *for all the speeds associated to Earth movements is a "flat*
- > > *valley" of local speeds averaging from +.001 C to -.001 C introducing*
- > > *a "error" of $.001^2 = .000001$ at the worst cases.*
- > >
- > *If the aether exist you must put it in the set of bodies as any other*
- > *entity.*

If the ether exist we cannot put it in the set of the bodies, for we don't know the exact contribution it gives to determine the local phenomenon: i.e. the one way speed of light is determined mainly by the local ether and here we can only get results that are at best just approximations.

- > > *Your approach is correct only if you limit it to local "collision like"*
- > > *interactions, otherwise it would contain the same conceptual errors as*
- SR.
- > >
- > > *Here the ether option doesn't solve or add anything: it just points out*
- a
- > > *simpler approach that saves the main route from the heuristic tactics to*
- > > *solve the minor relativistic problems.*
- > >
- > *Until now I do not need any aether. If you conceive it as an infinite*
- > *continuous body, this is a problem for my HIS approach, not an aid.*
- > *Can you give me some details about how you conceive the aether? Finite*
- > *or infinite? Mass? Energy? Some structure?*

I conceive the ether as a cumulating local effects of infinite various interactions, the only indirect notion of its presence is the trivial fact that light has a fixed speed limit in vacuum and this is extended to the behavior of moving bodies.

The ether could be a interface between our universe and a background undetectable essence of unknown nature.

In any case is save to use it, doing without it is refuting a preferred frame where light is isotropic and this is a conceptual error, unfortunately there is no way to prove anything about this boundary issue.

The acceptance of the ether is preferred for the same reason why one should accept the existence of a God (in the Pascal wager): it is safer to think God is there than think the contrary, this does not tell you anything about the real nature of God.

By accepting the existence of the ether we don't commit ourselves to know what is the real nature of it, we just choose the safer side.

> > > > *Now that I realized the perfect consistency of the SR machinery in the ether*
> > *ether*
> > > > *I am even more convinced that the SR Space–Time is not only wrong but also completely useless being SR possibly be fabricated in the ether.*
> > > >
> > > *I am reaching your same conclusion about the SR Space–Time, but without any aether (do not forget that I am exploring the original 1905 Relativity before Minkowski). Apparently the bad move was to put out all the bodies (with their masses and other attributes), considering only the space and time as having an independent existence. SR frame equivalence (together with symmetry and reciprocity) was the result, the wrong result. Every frame is different, even if Physics laws are the same in all of them, the associated body set is what make different every HIS.*
> >
> > *O.K if you limit this to "collision like" interactions, from a lowest HIS to a higher and higher HIS there is not a hierarchy of absolute nature, but a hierarchy of a relativistic interactions, you cannot grasp the whole at once, you can only know why you cannot do it, then to resort to a heuristic approach is correct, but only if you consider this approach just what it is: heuristic.*
> >
> *I follow the scientific method. I create the model that I want without any limitation. The confrontation with the real world determine in what extend the created model is useful or not to describe Nature. The GPS is just now my best argument to support my HIS approach.*

Science is (also, to me mainly) the attempt to logically explain the way nature works, a viable model as to first explain then predict, the GPS for the little I know uses prearranged clocks and they are daily corrected, they would work perfectly just by anchoring them to known sources at ground so I cannot tell what is what.

Your model uses the center of mass of a set of bodies as reference: is there a special reason why the center of mass acquires a this privilege ??? i.e the center of mass of the Earth if includes the Moon is very different from the one that excludes it, or should it include the Sun ??? how is the center of mass of the HIS shifted because of the Sun ?? A satellite orbit is affected from the variation of the density of the Earth surface, does the center of mass shifts accordingly to the various characteristic of the Earth surface???

If all these accidents make a change what is the use of such simplification???

Your HIS model is an viable approximation in the lack of knowledge of the totality.

best regards

beda pietanza

> > *I surely said more that my means should allow me to do, so be tolerant.*

> >

> > *best regards*

>

> >

> > *beda pietanza*

> >

> > > *Please read two of my post " Ether-SR ruler's hidden lengths" and*

> > > *"Ether-SR clock's hidden time rates" let me know what you think.*

> > > >

> > > *Let me see what I have to say about them.*

> > > > *thanks*

> > > >

> > > > *best regards*

> > > >

> > > > *beda pietanza*

> > > > >

> > > > > *RVHG*

> > > > >

> > > *RVHG*

> *RVHG*