

Re: definition of simultaneity and on the relativity of lengths and times by a. einstein

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- *From:* "EL" <hemetis@xxxxxxxxxx>
 - *Date:* 30 Jul 2005 23:30:51 -0700
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[Eugene Shubert wrote]

> Albert Einstein wrote:

>> It might appear possible to overcome all the difficulties attending
>> the definition of "time" by substituting "the position of the small
>> hand of my watch" for "time."

>

> That is correct Albert.

> Only defining time locally resolves many pitfalls.

[EL]

Yet how can we define that locality, and what length can we arbitrate to limit and bound the local space from the non local space!

Set a Cartesian grid in a Universal 3D manifold and place a clock at every node (the intersection of three orthogonal axis) of unit displacement as arbitrated for locality, and let it be one meter only.

If every clock was synchronous with all of the immediate 26 clocks in the vicinity, then all of the infinite Universal space must be local.

>

>> And in fact such a definition is satisfactory when we are concerned
>> with defining a time exclusively for the place where the watch is
>> located; but it is no longer satisfactory when we have to connect
>> in time series of events occurring at different places, or—what
>> comes to the same thing—to evaluate the times of events occurring
>> at places remote from the watch.

>

> Here is your greatest blunder, Einstein. In order to understand
> special relativity fully and derive the theory elegantly, it's not
> necessary to fabricate or rely on the concept of simultaneity.

> <http://www.everythingimportant.org/relativity/special.pdf>

[EL]

Any event within the observable reach of humans must have happened at whatever time, which must correspond to whatever the universal time indicates. However, the problem was that of measurement within our cognitive limitations' restrictions. We depend on spatial coincidences to identify eventual conversion on the limit. However, if such a spatial coincidence was remote to our observational position, we plead

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for an associated temporal coordinate to be included in the remote report. Since the remotely reported information cannot traverse the "empty" space faster than c (empirically verified) we prefer to use electromagnetic waves mediated by vacuum force-fields-vectors-fluctuations because that is the fastest way that we can obtain such information from the remote event to the local observation coordinate. Obviously, with a finite speed of information traversing space as a modulated EM wave, the report must be dilated such that the reported time of the event cannot match the time of the arrival of that information. However, if the data carried by the information informed the observer of multiple events with information arriving through different paths, but that the information indicated identical time readings, reported by universally synchronized clocks, the events must be simultaneous.

Thus, the technical problem must be confined to the manufacturing of clocks that can be synchronised side by side then tolerate being accelerated to new coordinates within the observable universe, without becoming significantly affected to the extent of running at a different rate than the clock that was never accelerated in its gravitational or inertial frame of reference.

One very practical method is to manufacture the highest accuracy clocks and restrict precision to the invariant significant figures within the time window of precision validity.

Of course we are free to apply any corrective methods to limit the accumulation of the insignificant variations to the sum that can cross the threshold of significance, and that is by calculating the collective kinetic effects that affect the clocks' rate of motion that corresponds to the arbitrated time units.

If a remote synchronized clock was not an option, but through triangulations a distance was calculable, and observation depended on telescopic means of capturing visible information mediated by light. Then the time of the event can be estimated by equating the spatial interval with $[ct]$.

It cannot be simpler.

EL

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• *Follow-Ups:*

◆ *Re: definition of simultaneity and on the relativity of lengths and times by a. einstein*

◇ *From: PD*

• *References:*

Re: definition of simultaneity and on the relativity of lengths and times by a. einstein

◆ *definition of simultaneity and on the relativity of lengths and times by a. einstein*

◇ From: francisco

◆ *Re: definition of simultaneity and on the relativity of lengths and times by a. einstein*

◇ From: Eugene Shubert

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