

Space-Time is a Structural Quality of the Gravitational Field Created by the Observer in the Process of Measurement

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In the book "Relativity: The Special and General Theory" (1920) Einstein discussed that it makes no sense to think about space-time as an independent physical quantity. The basic medium into which runs material change is the gravitational field. Space-time is only a structural quality of a gravitational field: <http://einstein.stanford.edu/content/relativity/q2442.html>

"Spacetime does not claim existence on its own but only as a structural quality of the [gravitational] field" (1).

The question arises, has space-time existed as a structural quality of gravitational field before man appeared on the planet, or it is result of development of a mathematical model of space-time and of scientific experiment itself. Heisenberg has shown that the observer is an integral part of scientific experiment. Space-time as a structural quality of gravitational field, one can understand as a result of measurement. With measurement of time (that is numerical order and duration of material change) one creates space-time as a structural quality of the gravitational field. It is the observer that with measurement, creates it.

Space-time appears during scientific experiment. It is a result of an interaction "observer–measurement–material change that runs into the gravitational field".

Einstein and Gödel were right in saying that there is no time in the universe, that universe is a timeless (atemporal) phenomenon (2). Time is what one measures with clocks. With clocks one measures duration and the numerical order of material change that runs in a gravitational field. Time enters into existence when one measures it. No measurement, no time.

The gravitational field is a "direct gravitational medium" between material objects. It is not that gravitational waves travel between material objects (similar to electromagnetic waves). Gravitational force acts between "quanta of space" term is from Rovelli (3), that build up a gravitational field and keep together material objects existing in it. In the EPR experiment, the gravitational field is a "direct information medium" between elementary particles (4,5,6,7,8).

Sources:

- [1] Einstein A., Relativity: The Special and General Theory (1920), page 155
<http://www.bartleby.com/173/>
- [2] Yourgrau P. (2006) A World Without Time: The Forgotten Legacy of Gödel And Einstein
- [3] Rovelli C. (1997) Loop Quantum Gravity
<http://relativity.livingreviews.org/Articles/lrr-1998-1/>
- [4] Sorli A., Sorli K. (2005) From Space-time to A-Temporal Physical Space, Frontier Perspectives, Vol. 14, Num. 1.
- [5] Fiscaletti D., Sorli A. (2005). Toward an a-temporal interpretation of quantum potential. Frontier Perspectives, Vol. 14, Num. 2.
- [6] Fiscaletti D., Sorli A. (2006). Toward a new interpretation of subatomic particles and their motion inside a-temporal physical space. Frontier Perspectives, Volume 15, Num 2
- [7] Fiscaletti D., Sorli A. (2007). Basic Frequency of A-Temporal Physical Space As A Driving Force of The Evolution, Scientific Inquiry, Vol 8. Num 1. pp 29-34
<http://www.iigss.net/Scientific-Inquiry/June07/2-Fiscaletti.pdf>
- [8] Fiscaletti D., Sorli A. (2007). A-temporal physical space and introduction to the theory of everything, Scientific Inquiry, Vol 8. Num 1. pp 65-80
<http://www.iigss.net/Scientific-Inquiry/June07/6-Fiscaletti.pdf>