



## Time Space Model

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January 5, 2022

Research

Subject Areas:

Time and space

Keywords:

Time travel, Parallel universe,

Newton's law, Einstein theory

# TIME SPACE MODEL

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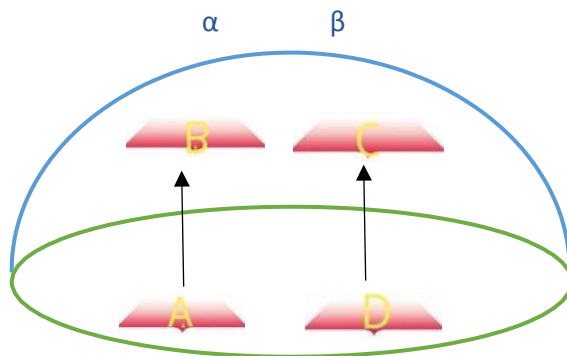
These model give physical visualization of time and space, there impact on anybody and give information about dependency of two on each other. The physical result has been drawn by use of classical and quantum physics. In this article condition of parallel universe and time travel has been shown.

## 1. Introduction

Time and space have been wonderful most suspicious concept till date and exact relation between two have not been explored very diligently and efficiently. Studies of Sir Albert Einstein have considered space as three dimensions and time as fourth dimension combining the two space-time fabric is formed and he considered it as conceptual model and his conclusion was that fabric of space time is warped by massive object. According to Minkowski space-time, time act as fourth dimension of space but it lacks any experimental assistance while Sorli and Fiscaletti took time as quantity for measuring changes in 3D space. While Sir Luiz Cesar Martini says time is dynamic and space is stationary and he do not consider time as fourth dimension, he considers time and space in form of energy. With different opinions till now only theoretical approach has been made for time space relation but no conclusion was mathematically proven that bridge the gap between two. These model explain this relation by using Newton laws of motion and Einstein special theory of relativity.

## 2. Methods

A theoretical approach of Newton's laws of motion and Einstein's special relativity was adopted for these models, and by combining these five postulates, they have been drawn. A three-dimensional figure has been drawn for explanation of the model.



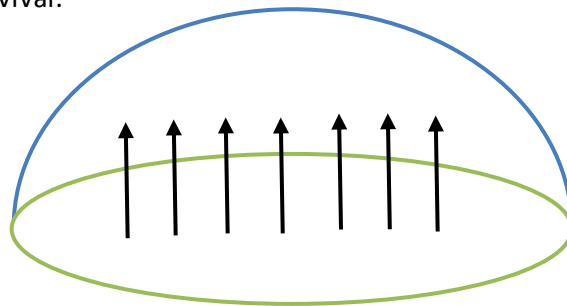
**Figure 1.** Overview of time-space model diagram

- Here blue line (hemisphere) indicates absolute time and green line (oval shaped) indicates absolute space.
- Black lines indicate any object/individual assigned within time and space.
- Pink areas 'B' and 'C' indicate relative time and 'A' and 'D' indicate relative space.
- Wall of space-time represents velocity of any object.

**2.1 Statement-** Time is responsible only to provide space and with facilities.

**Example-** Earth, human, all observable universe.

**Conclusion-** When anything comes in physical appearance, they get bound with time and space, which are provided for their survival.



**Figure 2.** Body (black) present within absolute time (green) and absolute space (blue)

**Proof –** Considering Newton's second law of motion  $s = ut + \frac{at^2}{2}$  (2.1.1)

If time is not present (i.e.)  $t=0$  then  $s=0$  which means no displacement and if there is no displacement it means there is no space.

Considering this at quantum level, let any human body remain stand still at any absolute space (consider absolute time curve as human body and absolute space curve within which body is standing).

Considering Newton's first law of motion

$$v = u + at\beta \quad (2.1.2)$$

where  $t\beta$  is any instant time on absolute time curve, as body is stand still

$v = u = 0$  so equation becomes  $0 = at\beta$ . But within the human body atoms keep moving so seeing inside human body (absolute time and absolute space curve).

Atoms are in motion within the body (relative space and relative time).

Considering this relative time w.r.t absolute time and by special theory of relativity we get

$$at\beta = 0 \tag{2.1.3}$$

$$a \frac{t}{\sqrt{1 - \frac{w^2}{s^2}}} = 0 \tag{2.1.4}$$

Where 'w' is velocity with which atom is moving and 's' is velocity with which some object has been travelled from atom and 't' is original time (relative time) taken for one whole journey by that object from  $at0 = \frac{2h}{s}$ . (starting point) where  $2h$ =total distance travelled for one whole journey.

Considering equation (2.1.4)  $\frac{t}{\sqrt{1 - \frac{w^2}{s^2}}} = 0$

We get  $1 - \frac{w^2}{s^2} = \infty$

$$\frac{w^2}{s^2} = \frac{1}{0} \tag{2.1.5}$$

$$w = 1 \text{ and } s = 0$$

Again considering equation (2.1.4),  $t = 0$

$$t = \frac{2h}{s} = 0$$

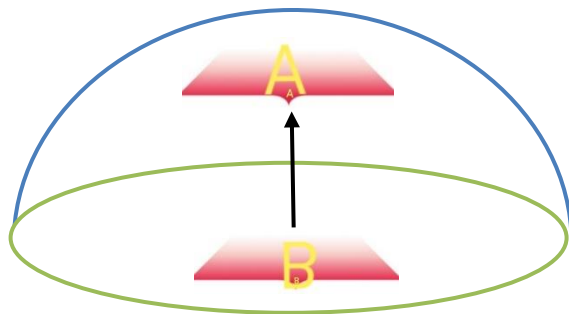
's' can't be infinite as seen from equation (2.1.5) so 'h' must be zero it means no height is present and hence space is not present as  $t=0$ . Hence without time space cannot exist.

**2.2 Statement-** Absolute space is dependent on absolute time but independent of any object/individual or relative time and relative space, if for anyone certain relative space is provided in certain absolute time and after many years if object/individual wants to go to same absolute space he left he can't, but if he wants to move to same relative space it is possible to do so.

**Explanation-** Here 'A' represents relative space and 'B' represents relative time. Object/Individual can move within this plane of 'A' and 'B' into the page and within this relative space and relative time only any object/Individual can go back and forth (i.e.) into the page and away from page.

**Example-** Visiting your high school after 10 years from time you left it. Here absolute space and absolute time is changed but relative space and relative time is same.

**Conclusion-** Every object/Individual carry its own world and within this relative space object/individual relative time is independent of object/individual movement. If absolute time and absolute space becomes equal to relative time and relative space than individual will never ever get old or die.



**Figure 3.** Body (black) within absolute and relative time and absolute and relative space

**Proof-** let absolute time 't' make the object move with some velocity 'v' so by newton first law of motion.

(all calculations are done considering absolute quantities only)

$$v = u + at \tag{2.2.1}$$

$$v - u = at = \frac{Ft}{m} \tag{2.2.2}$$

$$v - u = \left(\frac{t}{m}\right)\left(\frac{dP}{dt}\right) = \left(\frac{t}{m}\right)\left(\frac{dmv}{dt}\right) \dots\dots\dots [P(\text{momentum}) = m(\text{mass}) * v(\text{velocity})] \tag{2.2.3}$$

$$v - u = \left(\frac{t}{m}\right)\left(\left(\frac{mdv}{dt}\right) + \left(\frac{vdm}{dt}\right)\right) \tag{2.2.4}$$

$$(v - u)ds = \left(\frac{t}{m}\right)\left(\left(\frac{mdv}{dt}\right) + \left(\frac{vdm}{dt}\right)\right)ds \dots\dots\dots \text{multiplying both side by } ds(\text{small distance}) \tag{2.2.5}$$

$$(v - u)ds = \left(\frac{t}{m}\right)\left(mdv\frac{ds}{dt} + vdm\frac{ds}{dt}\right) \tag{2.2.6}$$

$$(v - u)ds = \left(\frac{t}{m}\right)\left((mvdv) + (v^2dm)\right) \dots\dots\dots \frac{ds}{dt} = v(\text{velocity}) \tag{2.2.7}$$

$$= tvdv + tv^2 dm/m$$

$$(vu)s = \left(\frac{tv^2}{2}\right) + tv^2 \ln|m| + c \dots\dots\dots \text{on integrating} \tag{2.2.8}$$

$$ats = \left(\frac{s}{v}\right)\left[\frac{v^2}{2} + v^2 \ln|m|\right] + c \dots\dots\dots v - u = at \text{ and } t(\text{time}) = d(\text{distance})/v(\text{velocity}) \tag{2.2.9}$$

$$t = \frac{[(\frac{v^2}{2} + v^2 \ln|m|) + c]}{va} \tag{2.2.10}$$

as I have assumed absolute time =relative time and absolute time has stopped it's movement therefore velocity will be zero as absolute time has lost it's originality and control and now time is running according to individual which is within the system, so putting this v=0 in equation (1) we get t=∞ hence time will never end when absolute time =relative time and in this case any individual can time travel as individual have full control over absolute time.

**2.3 Statement-** Anybody within which there is motion, it is time and space dependent even if body as a whole is not in motion.

**Example-** As every object is made of atoms (electrons, protons) they are always in motion and as they are in motion they have birth and as described above they are provided with time and space . Movement within the man or stone etc.

**Conclusion-** If anything is in motion than there is time acting on it and space is present near it , even if we can't measure or see.

**Proof-** Considering newton first law of motion  $v = u + at$

$$\text{let } t = 0 \text{ so } v = u \tag{2.3.1}$$

Put this in newton IIInd laws.  $s = ut + \frac{at^2}{2}$

$$\text{as } t = 0 \text{ therefore 's = 0'} \tag{2.3.2}$$

means there is no space for motion

When t=0 and by newton third law  $v^2 - u^2 = 2as$

$$\text{as from (4.1) } 2as = 0 \text{ therefore } a = 0 \text{ and so constant velocity exist} \tag{2.3.3}$$

Now if constant velocity it means either object moving with constant velocity or if initial velocity is zero than final velocity is also zero that means object is stand still.

But as shown above when t=0, s=0 (i.e.) no space available so it's not possible that object will move with constant velocity without space

As you can see from (2.3.2) that when time equals zero space becomes zero

And from (2.3.3) that when time is zero motion is zero so it means if space is zero motion is zero

Hence if any motion do exist than there is presence of time and space.

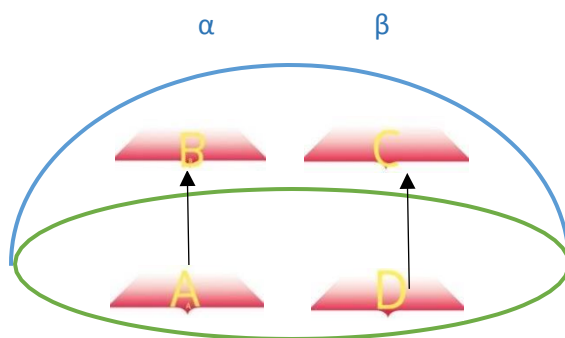
**2.4 Statement-** Any particular absolute space can be provided to one body only and relative time of that particular object/individual can be similar to other bodies with different absolute space but absolute time would be different for both.

**Explanation-** Let two different bodies be present in absolute time at instant ' $\alpha$ ' and ' $\beta$ '. Relative time of one body be 'B' with relative space of 'A' and second body present at relative space 'D' with relative time 'C'.

Statement says that if any object/Individual present at instant ' $\alpha$ ' (absolute time) than absolute space at this instant is acquired only by that single object/Individual, and second body cannot acquire this absolute space instead it will acquire another absolute space having absolute time ' $\beta$ '. But relative time (i.e.) 'B' and 'C' at both instant could be same.

**Example-** Within human body there is atom, within earth there are humans and other creatures, within space there is moving galaxy.

**Conclusion-** Relative space of both absolute time instant ' $\alpha$ ' and ' $\beta$ ' is different, thus relative space is dependent on absolute time. Hence parallel universe can exist which can have different absolute time and absolute space but whose relative parameter can be same.



**Figure 4.** Two bodies (black) within absolute and relative time and absolute and relative space .

**Proof-** As I showed in point 2.3. described above that any body with motion or within which there is motion is canopied by space .

And from point 2.1. described above time is responsible to provide space .

Hence our observable universe is within the space of some other universe where time and space do exist.

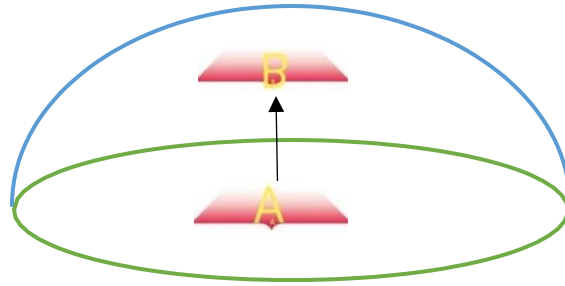
**2.5 Statement-** If any Individual/object movement stops (i.e.) it's relative velocity comes to halt , than that object relative time becomes equal to absolute time .

**Explanation-** Consider a body within absolute and relative space time and object has reached to its end of life , as a result it become free from relative parameters but its fragments becomes part of absolute space and absolute time.

**Example-** When one animal eaten by other than it's particle become part of second animal, similarly when some star get sucked by black hole that star become part of black hole.

**Conclusion-** Any object can't get out of absolute time and remain intact within absolute space and if by somehow object flee from relative time and relative space that object is still trapped in absolute

parameters. Absolute Time has capacity to bind object in loop and never gets out till time itself comes to an end. But anyone can come out of there relative time and relative space.



**Figure 5.** Single body (black) within absolute and relative time and absolute and relative space.

**Proof-** Considering any body at relative time 'A' has been died at any instant of absolute time, hence its velocity is now zero.

Now anyone observing that object from outside the system and applying einstien special relativity we get.

$$t\beta = \frac{t}{\sqrt{1-\frac{v^2}{c^2}}} \quad t\beta = \text{time out of system (absolute time)} \quad (2.5.1)$$

$$t = \text{time within system (relative time)}$$

$v = \text{velocity with which object is moving(velocity in relative space and relative time)}$

As object has died  $v=0$ ; putting this in equation we get.

$$t\beta = t \quad (2.5.2)$$

Thus if motion in relative time and relative space stops, than relative time can become equal to absolute time.

### 3. Discussion

1. Other published work doesn't give paractical visualization either that is based on observation or explanation is theoretical with their own examples. But these model is based on universal laws and theories .
2. It becomes quite hindrance to think in this subject unless new observation or theories are made but by using these model as tool advancement in time and space can be explored.
3. If you are using this model for comparision than two bodies should be of same type example it is not possible to compare one body of quantum level and other of celestial level .
4. If comparision of more than two bodies than it becomes quite complex to handle.

### 4. Conclusion

Wide picturisation of time and space can be easily done and by further advancement with new theories this model can be easily modifiable. Here condition for time travel, condition for parallel universe to exist can be easily visualized and main advantage is that no one has to wait for any new theories to be discovered to work on this instead it can be used as experimental tool for answering question in yes or no and helpful in giving a direction to your thought for time -space.

Derivation of postulates was discussed. Main ideas were explained and established the condition for postulates.

**Data accessibility.** This article has no additional data.

**Competing interests.** Competing interests is not available.

**Acknowledgements.** Thanks to Shekhar Yadav ,L.B Prasad ,V.K. Giri for there views and Mohd. Estiyak, ,Pooja rai for helpful discussion and Swati chaturvedi and Anjali rai for there valuable corrections.

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