

Mathematical and Statistical Approach to Define Past Present Future Events

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Abstract: *The purpose of the research is to study the complexity of the higher dimensions, by understanding the existence of events in our timeline. The idea of existence of higher dimensions is creating great interest among the scientists. The purpose is to have a better understanding of the variation in past, present and future wrt other objects and to find out how our timeline in higher dimensions would exist. Using a spectroscopy, this study analyzed that the amount of energy transferred from one event to the other event is same. We used regression model and statistical analysis to show the same, and proved our observations mathematically. The results concluded that past, present and future don't have same masses and categorized the final structure of our timeline. The study definitively answers the question as to why two objects exist in the same event*

1. Introduction

In our everyday life we always tend to think about the past, present and future due to which we often have a set of questions regarding them. These are actually events through which we travel in our lifetime, commencing from birth to death. These set of events are entangled with each other. Quantum entanglement is a physical phenomenon that occurs when pairs or groups of particles are generated, interact in ways such that the quantum state of each particle cannot be described independently of the state of the other. According to Einstein, who gave the famous theory of relativity, in which he has described that we live in a four-dimensional world comprising of three dimensions i.e. Length, Breadth and Height and also the fourth dimension which is time. He concluded from his theory that space-time is a fabric which can be bent by mass or energy. Consider a star which is 1AU away from the observer who is observing the star, light coming from the star takes approximately 6 minutes to reach the observer so the observer always sees the past condition of the star and is never able to see the present state of the star. Through this paper we will try to prove that the star and the observer lie in the same event, the events past, present and future have different masses and we will get to know what the final structure of events looks like in our timeline and if we ever reach the higher dimensions then what exactly will they look like. Einstein in his theory of special relativity gave the equation of energy mass equivalence which is $E=mc^2$ which states that energy also contributed to mass for example if we have a clock, the total mass of the clock will be the actual mass of the clock and the energy released by the springs etc while to make the clock work as it will also contribute to mass which is calculated by the formula $m=E/c^2$.

2. Literature

As explained in the example of a star and the observer which are 1AU apart so let's make a consideration that there is an observer who is looking at a star which is approximately (1AU) from him. From the frame of reference of the observer he will be looking at the light which is 8 min old. Our Aim is to prove that the both the star and the observer exist in the same event So, let, if possible the star and the observer lie in different events

From the frame of reference of the star PAST-1 (Past of the Star)

Present-1 (Present of the Star) FUTURE-1(Future of the Star)

From the frame of reference of the observer.

Past-2 (Past of the observer) PRESENT-2 (Present of the observer) FUTURE-2 (Future of the Observer)

Since from the frame of reference of the observer – When we are observing a star which is 1AU away from us. The light of the star coming to us will reach in approximately eight minutes so the light which the observer is observing at the present moment is eight minutes old than that which is emitted by the star. For this explanation we can come up with-

$$Pa1=Pr2$$

This equation describes that the light coming from the sky reaches the observer eight minutes after thereby resulting that the past of the star will be the present of the observer as because the light travels from one event to the another.

Now, from the above example given we can also understand the fact that things which will be happening in the star in this present and thereby resulting in the change in this intensity of light will be happening in its present and that present of the star will be observed by the observer in his future. From this discussion we are able to identify our next equation that is-

$$Pr1=Fu2$$

This equation describes that since light coming from the star in its present will reach the observer eight minutes later of the present of the observer thereby reaching him in its future.

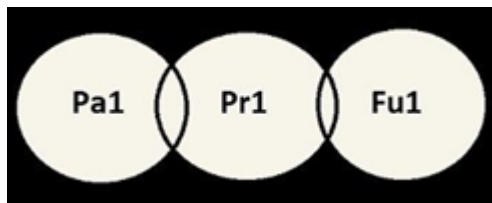
From the above discussion we can also conclude that the event which will be happening in the future of the star will happen later in our future thereby forming the equation – $Fu1=Later\ in\ Fu2$

Please note that all these aspects and equations will be same with the frame of reference of star and the observer. This is how the events of the star look like

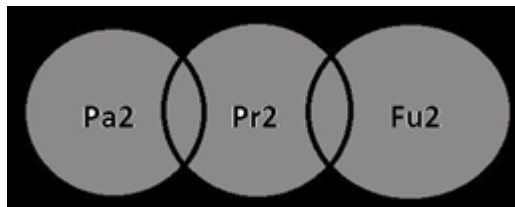
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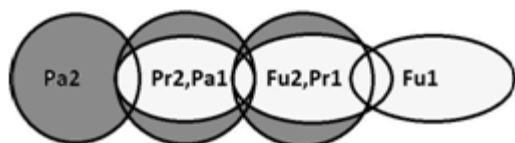
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This is how the events of the observer will looklike



As explained in the equations when can combine the two get the final structure of events.



This is how the events in our timeline would look like when we reach the higher dimensions. Now since the light is travelling from a past event to the future event and as we all know that light is a form of a energy and energy contributes to more mass which is calculated by the equation $m=E/C^2$

3. Methodology

Let a system p have energy E_1 and surrounding q have energy E_2 let the energy released by the surrounding be x The energy gained by system be y

To prove: $x=y$

So change in energy in system p is $E_1 + y = E_3$

Change in energy of surroundings q is

$$E_2 - x = E_4$$

Adding the two equations we get $E_1 - x + y + E_2 = E_3 + E_4$

As we know that energy can neither be created nor be destroyed , it always remains constant So ,

$$E_4 + E_3 = k E_4 + E_2 = k$$

So $x=y$

This was also proved by our other set of experimentation conducted using a simple light spectrum and spectroscope. We passed white light (energy source was known) through a prism and passes the substituent colours of light i.e monochromatic light was allowed to travel distance “x” amd time “t” was then allowed to hit a screen with spectroscope and the wavelength was recorded (table 1), we calculated the the energy and plotted the comparison charts (Fig1 and Fig2). Thrice the experiment was conducted and there regression analysis was performed(fig3).

Table 1: Representing the recorded wavelength and velocity, also total energy given and total energy harvested

ENERGY*10 ⁻³⁴ SPECTRA	DISTANCE (M)	TIME (mS)	VELOCITY	WAVELENGTH (FREQUENCY)(HZ)
12672.5616 VOILET	0.8	3.4	0.2352941176	450 1912.5
12175.5984 INDIGO	0.8	3	0.2666666667	490 1837.5
11198.23744 BLUE	0.8	2.6	0.3076923077	520 1690
10668.14336 GREEN	0.8	2.3	0.347826087	560 1610
9773.6096 YELLOW	0.8	2	0.4	590 1475
7363.33808 ORANGE	0.8	1.4	0.5714285714	635 1111.25
6957.4848 RED	0.8	1.2	0.6666666667	700 1050
72000 white (source)				
total given was				
72000	70808.97328			

ENERGY*10⁻³⁴ (KJ) vs. SPECTRA



Figure 1: Representing the breakdown of white light into its monochromatic light forms as per the theory

ENERGY*10⁻³⁴ (KJ) vs. SPECTRA

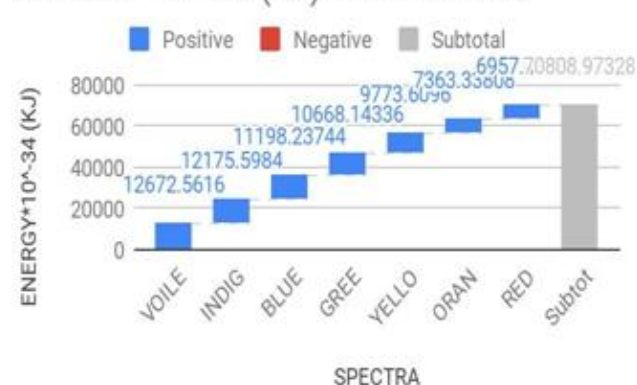


Figure 2: Representing the energy recorded from monochromatic spectra as per the experiment

ENERGY*10⁻³⁴ (KJ), ENERGY*10⁻³⁴ (KJ) and ENERGY*10⁻³⁴ (KJ)

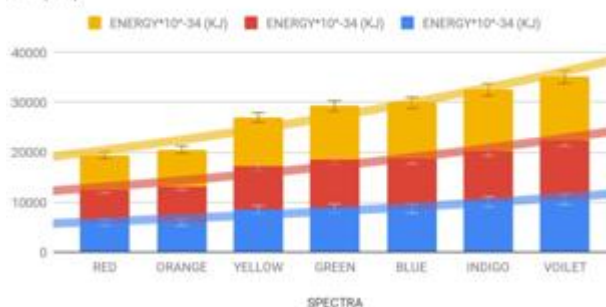


Figure 3: Representing the energy, regression analyses with their regression coefficients, of three different experiments

4. Results and Discussion

From the Fig1, Fig 2, and Fig 3, it was clearly shown that the experiment was conducted with minimum error, based on regression analysis. It was also shown that the energy on splitting of white light was correctly approximated with the above mentioned theory, which states that since energy gained by the present event is equal to the energy lost by the past event which signifies that the future have more mass than present and past events . Thereby, making spacetime morebend.

5. Conclusions

It was concluded from the research that events have different masses, besides that we were able to categorize the final structure of events as to how they will look if at all we reach the higher dimensions.

References

- [1] <https://www.youtube.com/watch?v=vrqmMoI0wks>
- [2] <https://phys.org/news/2013-04-sunlight-earth.html>