iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 9 **Issue:** X **Month of publication:** October 2021

DOI: https://doi.org/10.22214/ijraset.2021.38583

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue X Oct 2021- Available at www.ijraset.com

Speed of Light Constant

Gaurav Singh Patel
Government polytechnic Lucknow

Abstract – I have a question that "is speed of light is a constant in all over universe" if yes then I have seen its all properties but I have found that the speed of light is not constant in all over universe as time is relative same as speed of light is also relative, so in this research paper I have proved that speed of light is relative and I have given a new formula for varying speed of light.
Keywords- speed of light constant, gaurav singh patel gravity, gaurav singh patel, mystery of speed of light, speed of light

I. INTRODUCTION

As we know that time is not the same everywhere in the universe, so how does the speed of light keep itself the same. So let's do a thought experiment, suppose there are three friends, joy, toy and Roy, out of which the toy is on the earth, which is shown by the time cone 1 in the diagram. We have sent joy and Roy to two different places in space, Joy went to a place where time is slow and Roy is sent to a place where time is fast, joy activity is displayed on time cone 2 and Roy activity on time cone 3.
Now we told all the three people Joy, Roy, Toy, do experiment of speed of light, then according to old theories, all the three people will get the same speed of 299792458 m / s, so we have displayed them by point P and Q and R.

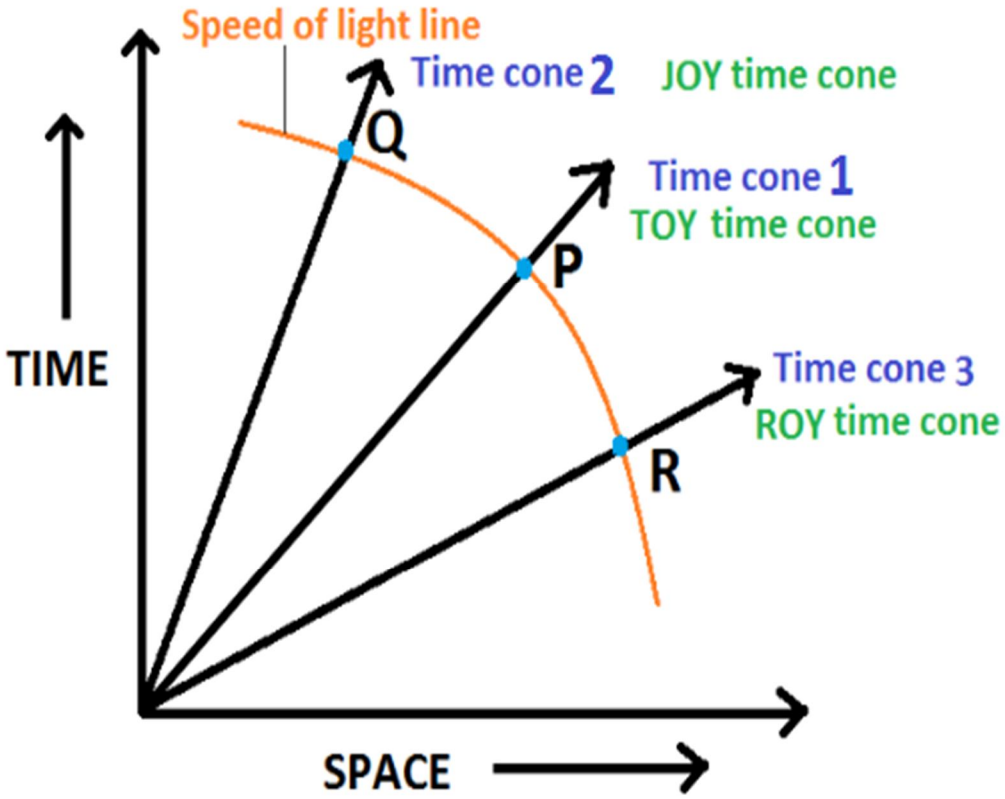


Fig 1 space and time

Point P is observation by toy of speed of light at time cone 1
Point Q is observation by joy of speed of light at time cone 2
Point R is the observation by Roy of speed of light at time cone 3
Now if we observe the observation of joy and Roy from the time cone of the toy, then we find that the speed of light of joy appears to be slowing down on the time line of the toy and Roy's speed of light appears to be more on the time line of the toy happens.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue X Oct 2021- Available at www.ijraset.com

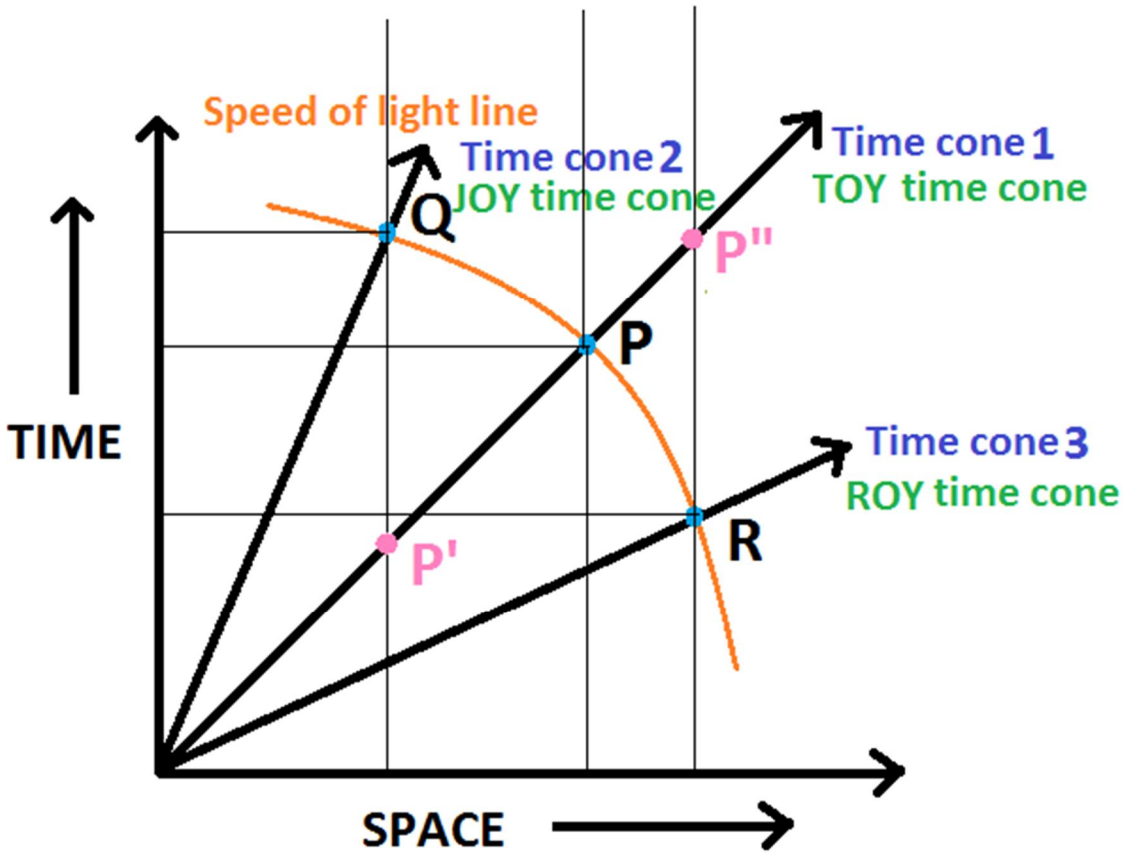


Fig 2 space and time with three different time cones

Compare of cover distance by light in different position

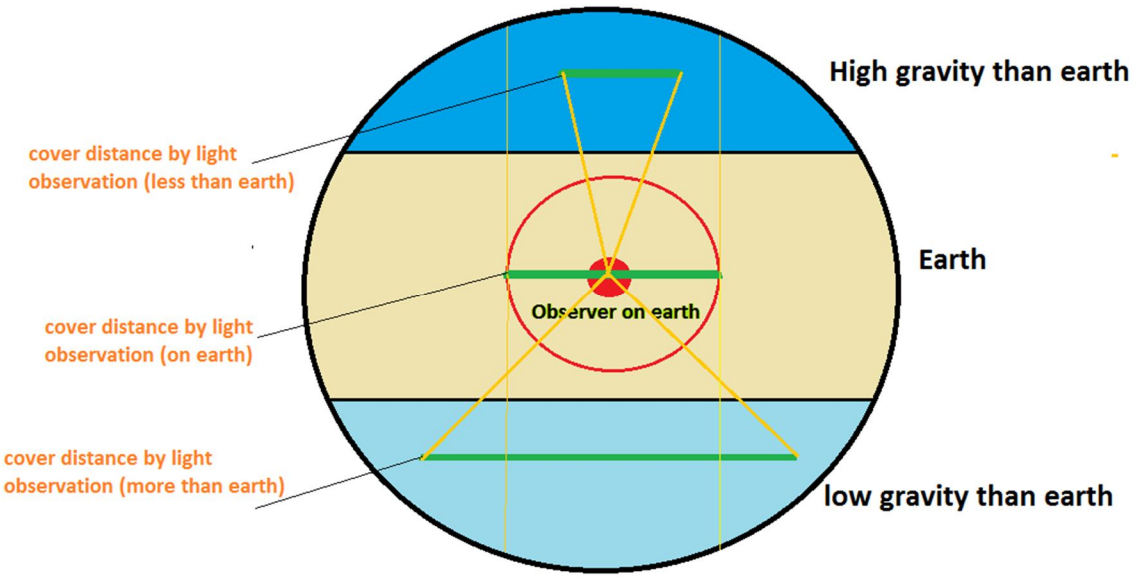


Fig 3 problem in speed of light

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue X Oct 2021- Available at www.ijraset.com

Point P' is joy's observation on toy's time line
Point P" is Roy's observation on toy's time line
But it is not possible that the speed of light seems to be changing, so we should see the same speed of light from everywhere.
So now, keeping the speed of light constant in the diagram, we draw a line AB from point P, but by doing this, the joy of time cone 2, where time is slow, the speed of light will increase and in Roy's where time is fast, there is speed of light. will be slow.

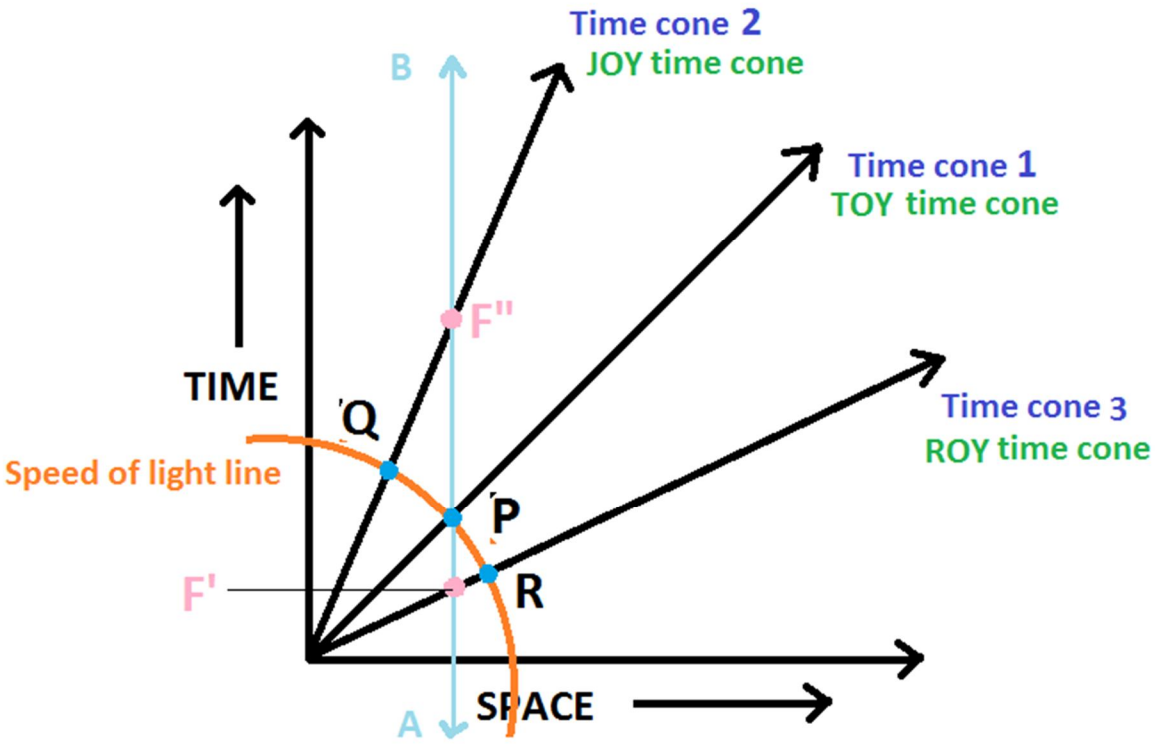


Fig 4 solution of speed of light constant

Line AB is constant speed of light from toy's time cone
Point F' is real speed of light on Roy's time cone
Point F" is real speed of light on joy's time cone
Laws of speed of light –
After study of graphs i am on conclusion that i am showing in my laws-
first law –"if we only observe one Time cone then we find speed of light is constant for ever
"speed of light is only constant in only one Time cone"
Second law – "in compare of same time of two different time cones the cover distance by light is constant that is 299792458 m.
Let us understand this with an example-
Suppose we observe two time cone 1 and time cone 2, suppose time is fast in time cone 2 and the value of 1 second is 0.5 second, so the speed of light in time cone 2 will be half.
Relative speed of light ×relative time = 299792458 m .....equation 1
Relative time = (time on earth)/(same value on other time cone)
Relative time example – 2 times, 3 times etc.
Let us now tell you why what we are saying is true?
As we know that gravity, sound and light are all three waves. We also know that the sound wave travels at a higher speed in dens matter e.g. the speed of sound in iron is greater than the speed in air. Similarly, light also travels through space-time, that light should also follow the same property.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue X Oct 2021- Available at www.ijraset.com

Now gravity is the cause of replaces strings, the higher the density, the higher the gravity and the higher the density of the replaces strings, the higher the speed of light.
Therefore, the higher the gravity, the higher the speed of light, and according to equation 1, the more the speed of light, the slower the time.

II. RESULTS

So finally -
Time will be slow in high gravity and time will be fast in low gravity, this is what tells us relativity.
change speed of light × relative time = 299792458 m
c' × t" = 299792458 m
according to relativity

$$\frac{t}{t'} = \sqrt{1 - \frac{V^2}{C^2}}$$

$\mathbf{C'} \times \sqrt{\mathbf{1} - \frac{V^2}{C^2}}$ = 299792458 m/s

$\mathbf{C'} \times \sqrt{\mathbf{1} - \frac{2gR}{C^2}}$ = 299792458 m/s

$\frac{C\prime}{C} \times \sqrt{\boldsymbol{C^2 - 2gR}}$ = 299792458 m/s

$\mathbf{C'} \times \sqrt{\boldsymbol{C^2 - 2gR}}$ = **(**299792458) ×C (m/s)^2

$\mathbf{C'}\sqrt{\boldsymbol{C^2 - 2gR}} = (\mathbf{299792458}) \times$(299792458) (m/s)^2

$$\mathbf{C'} = \frac{\mathbf{8.98755178736818 \times 10^{16}}}{\sqrt{C^2 - 2gR}}$$

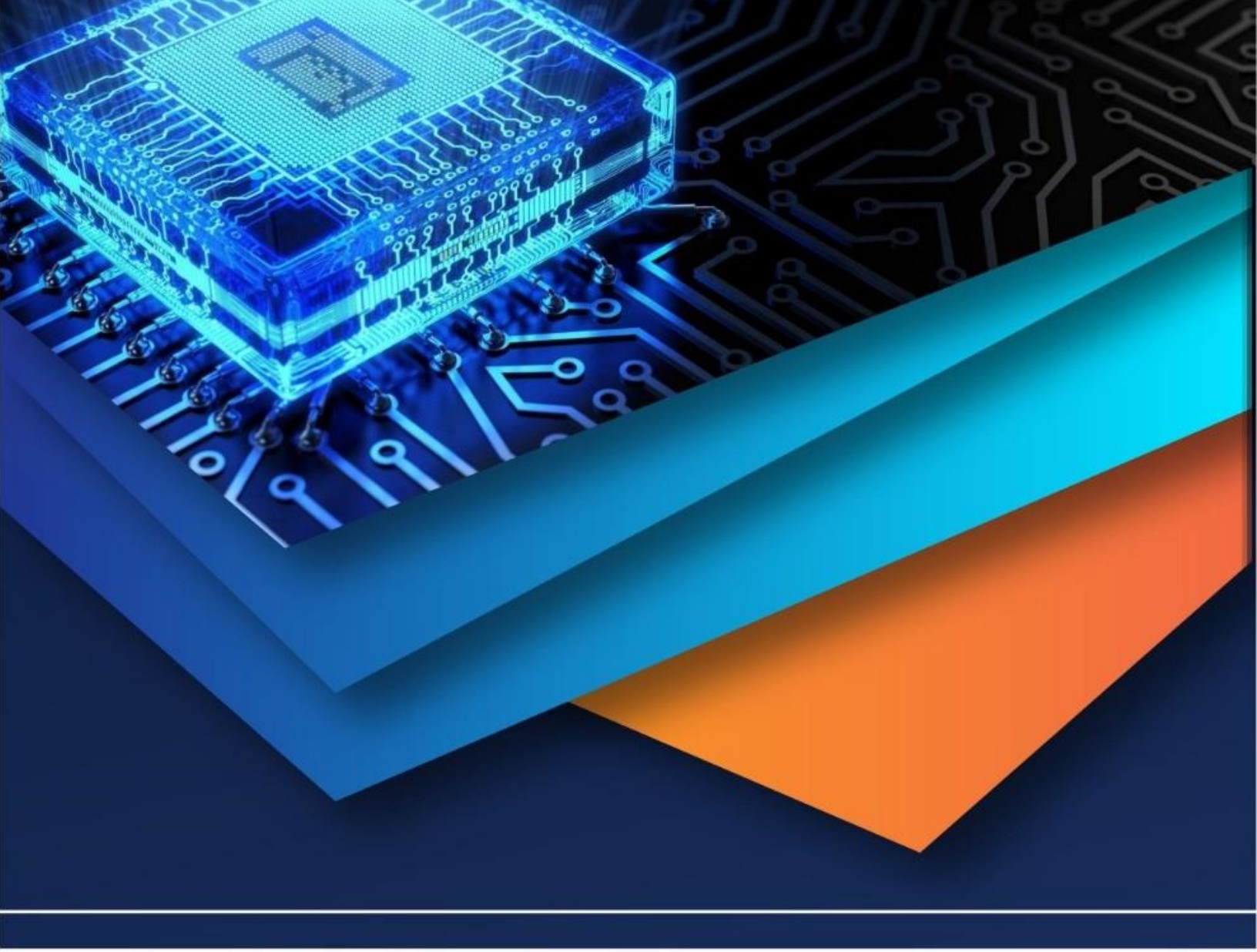
III. CONCUSION

So finally speed of light is not constant is all over in universe it is varying and its varying formula is –

$$\mathbf{C'} = \frac{\mathbf{8.98755178736818 \times 10^{16}}}{\sqrt{C^2 - 2gR}}$$

REFERENCES

[1] Theory of relativity
[2] Albert Einstein: special relativity and general relativity, proposed and published in 1905 and 1915,



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY