Visualizing Gravity in Space-time by using Mahesh Laws of Gravity

Mahesh Nagasai Parripati
Amrita School of Engineering, Bengaluru

***Abstract*— This paper presents two new laws of gravity for understanding gravity of a planet or a star or a black-hole. By using these new laws, the gravity can be determined in a whole new way, and with these new laws of gravity it is possible to determine the gravity pull of an object in terms of weight, and also by using these laws able to determine which body possesses gravity in space-time.**

I. INTRODUCTION

General relativity states that the massive objects wrap the space-time around the massive objects so that space-time around the massive objects is curved in nature.

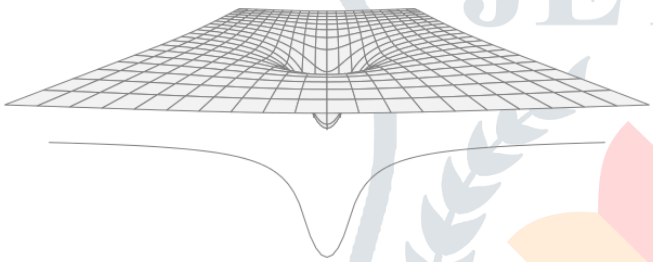
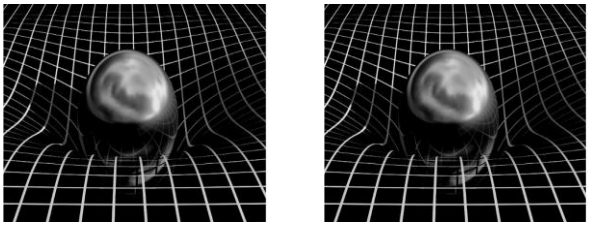


Fig 1: Space-time curvature due to massive object

So, from his theory of general relativity Einstein stated that gravity is the consequence of uneven distribution of masses due to the curvature of space-time.

II. PROBLEM STATEMENT

According to Einstein massive objects creates the curvature of space-time. The problem here is if two objects having the same masses and same radius but having different rotational speeds will have the same curved space-time around them or not.



a) b)

Fig a): Object with same mass and radius
Fig b): Object with same mass and radius but different Rotational speed.

III. PROPOSED LAW'S OF GRAVITY FOR SPACE-TIME CURVATURE

The curvature of space-time depends upon the mass of the object and rotational speed of the object or the momentum of the object. The curvature of space-time around the object increases with an increase in rotational speed of the object with constant mass.

Mahesh Law- I: The curvature of the space-time is directly proportional to the mass of the object and the rotational speed of the object or momentum of the object.

$$S_c \alpha M.S$$

$$S_c = K.M.S \quad (1)$$

Units of S_c is $Kg.M.S^{-1}$
Where S_c is space-time curvature.
M is the mass of the object in Kg.
S is the rotational speed of the object in m/s.
K is constant value of 1.

The momentum of the object has a force on the space-time will create the curvature of space-time can be described as Gravitational momentum weight.

Mahesh Law – II: The gravitational momentum weight is directly proportional to the mass of the object and rotational speed of the object and inversely proportional to the Length of the day of the object or time required to complete one rotation of the object **.**

$$G_{mw} \alpha \frac{M.S}{T}$$

$$G_{mw} = K . \frac{M.S}{T} \quad (2)$$

Units of G_{mw} is Newton.
Where G_{mw} is Gravitational momentum weight.
M is the mass of the object in Kg.
S is the rotational speed of the object in m/sec.
K is constant value of 1.

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T is time period in seconds required to complete one rotation.

Where time period (T) of a planet for 1 rotation can defined by using Mahesh Time law .

Mahesh Time Law: The time period required to complete one rotation of a planet or a star or a black-hole is directly proportional to the radius of the planet or a star or a black-hole and inversely proportional to the rotational speed of the planet or a star or a black-hole.

$$T \ \alpha \ \frac{R}{S}$$

$$T = \mu . \frac{R}{S} \qquad (3)$$

Units of T is Seconds

Where T is time period required to complete one rotation.

μ is Universal Time Constant.

R is the radius in meters.

S is the rotational speed in m/s.

Where Universal Time Constant

$\mu = 6.28$

Table I

Time period of different objects

S.no	Object	Actual (T) Value in seconds	(T) Value by using Mahesh Time Law In seconds
1	Sun	2183731.2	2187182.1
2	Mercury	5067000	5063224
3	Venus	20997360	20984524
4	Earth	86040	86138.6
5	Mars	88774.92	88435.3
6	Jupiter	35733.24	35917.5
7	Saturn	38361.6	38381.3
8	Uranus	62064	61522.1
9	Neptune	58000	58017.1
10	Pluto	551815.2	569416
11	Moon	2452140	2357680.5

So now substitute Eq (3) in Eq (2)

$$G_{mw} = K . \frac{M.S}{\mu \frac{R}{S}} \qquad (4)$$

Where K is constant value of 1.

μ is Universal time constant.

R is radius of the object in meters.

S is rotational speed of the object in m/s.

M is mass of the object in Kg.

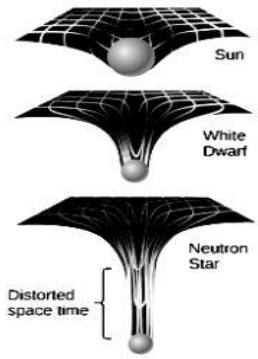

Fig 2: Curvature of different objects

Table II

G_{mw} of different objects

S.no	Object	G_{mw}(Newton)
1	Sun	1.816141×10^{27}
2	Mercury	1.973536×10^{17}
3	Venus	4.201855×10^{17}
4	Earth	3.230112×10^{22}
5	Mars	1.750389×10^{21}
6	Jupiter	6.607503×10^{26}
7	Saturn	1.460515×10^{26}
8	Uranus	3.653007×10^{24}
9	Neptune	4.732548×10^{24}
10	Pluto	2.876973×10^{17}
11	Moon	1.441989×10^{17}

CONCLUSION

From Eq (4) it is observable that if the rotational speed of the object increases with the same mass and the radius the Gravitational momentum weight will increase then the curvature of space-time increases and if the rotational speed of the object decreases with the same mass and radius the Gravitational momentum weight decreases then the curvature of space-time decreases.

So, from the conclusion the Gravity is not the consequence of the uneven distribution of masses, it is the consequence of the uneven distribution of momentum of the object.

REFERENCES

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