

## **Gravity : An Effect of space on mass**

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### **Abstract**

Newton considered gravity as an interaction between two masses : one mass interacts with the other mass directly, without any role for the space in which they move. Newton's concept of gravity was completely modified when Einstein considered gravity as an effect arising due to the action of mass on space. Extending this concept further, Vethathiri in his phenomenal work on Space and its transformation identifies gravity as the effect of the action of space on mass and postulates repulsive forces between any two particles due to their spins. Based on these concepts, we have been developing in recent years, a new model called Vethathiri Model of the Universe and Beyond.

As an application of this model, we discuss and derive here a formula for the centripetal force which keeps a planet in its path around the sun. As one can find, our formula drastically differs from that of Newton and remains free from certain conceptual difficulties associated with Newton's formula.

For the centripetal force acting on an orbiting test particle at a distance  $r$  from the sun, our formula is :

$$F = C - R_s/r^2 - Kr$$

where  $C$ , and  $R_s$  are constants and  $K$  is a constant for a given planet. Of the three terms on the right hand side of the above expression, the first one is a constant term contributed by the space; the second one contributed by the sun varies inversely with  $r^2$  and the third one is contributed by the free particle medium between the sun and the planet.

While Newton's law of gravitation is derived from Kepler's laws, our expression for the force is derived from certain axioms. It is therefore imperative on our part to show that our expression leads to Kepler's laws for planetary motion.

Work is in progress to show that the above formula does lead to Kepler's laws.

#### REFERENCES :

1. Alagar Ramanujam and Uma : International conference on "Physical Interpretations of Relativity Theory" London (September, 2000 )
2. Alagar Ramanujam and Uma : Proc. Of the Brain Trust (World Community Service Centre, Chennai May 2001 )
3. Meera, Uma and Alagar Ramanujam : National Symposium on Mathematical methods and its Applications ( Indian Institute of Technology, Chennai, 2001 ).

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