

# Derivation of Siva's Constant 'K' of Physics\*

Siva Prasad Kodukula<sup>1</sup>

<sup>1</sup>Center for Innovation & Discovery, 15-11-69, Sundar Rao Street, Bheemunipatnam-531163, India; Email: [sivkod@gmail.com](mailto:sivkod@gmail.com)  
Web site: <http://www.innovation-discovery.com>

## ABSTRACT

Siva's Constant 'K' is a constant used in the Equations of 'Double Relativity Effect and Siva's Theory of Gravitation'. By means of mathematics it is not possible to solve all the equations, so by means of a logical physical theory Siva's constant 'K' has been solved and calculated. Siva's Constant is a very important constant for cosmological concepts like 'Heart of the God Model of the universe, Film theory of the universe'. Further research on this new approach of cosmology the Siva's Constant has been modified slightly. Theoretical value of Hubble's constant is calculated to satisfy all the parameters of this new approach have been concluded by this theory.

**Keywords :** Cosmology; Siva's Constant; Heart of God; Double Relativity Effect; Film theory of universe; Space time equivalence.

## 1 INTRODUCTION

The following concepts of cosmology and physics have been utilized to derive the value of Siva's Constant 'K'. Introduction of 'Siva's Constant 'K'[2] has also influenced some of the concepts like 'Space Time Equivalence'[5] and 'Equation for consciousness'[6]. This derivation is a modified version of 'New cosmological constants' [4].

### 1.1. Double Relativity Effect [1]

Double Relativity Effect explained that photon is a Non-Conventional Particle (NC particle). Non-Conventional particle is not a particle. It is a point at which space is zero, time is zero and mass is zero. This point will be viewed as a particle with certain energy and momentum and will have a particular velocity in one dimension. The same particle or point will be with different velocities in different dimensions of time as described in 'Double Relativity Effect.' Also its velocity is constant for all Inertial Frames of Reference. Thus light is a Non-Conventional particle of our four dimensional universe.

### 1.2 Siva's theory of Gravitation[1]

When we apply Double relativity to space time of our universe, and assumed that the space time is made up of Non-Conventional Particles, we concluded a new theory of Gravitation with equation  $Vd = K$  where Velocity of a body (exists in this universe with in a fraction of sec i.e  $7.6813 \times 10^{-44}$  sec) at any point of space towards a point at 'd' distance from that point. At the same time there will exist a velocity  $V = Hd$  away from that point which obeys Hubble's expansion theory. In these equations 'H' is Hubble's constant and 'K' is Siva's Constant. Both of these forces explained in a single curve represents 'film of the universe' as explained by 'Film theory of the

universe'[1]. The three dimensional view of this space time velocity curve is the model of the universe and is basis for a new model of universe called 'Heart of the God' model of the universe.

### 1.3 Film Theory of the Universe [1].

As per this concept the universe in which we are living is a result of slide show of films changing at every  $7.6813 \times 10^{-44}$  seconds. There is no link between these films. The events are prefixed and programmed. It is just like a movie in which 16 photo films will change in every second since it is the caching speed of human eye. Universal films are also similar to movie films. All the films are separate. But universe as a whole is a continuous flow of events.

### 1.4 Heart of the God Model of the Universe [3].

As per this theory, four dimensional 'space-time' is like a three-dimensional fluid of density  $4.776335 \times 10^{60}$  Kg/m<sup>3</sup>. It is in almost spherical shape. It is existed as it is. It has no beginning or no ending. It fluctuates for every  $7.6813 \times 10^{-44}$  sec. In each fluctuation, it creates matter. Means, pumps the matter in to this universe. It is similar to a human heart which fluctuates 72 times every minute to pump the blood. So this is called as "HEART OF THE GOD" The density of the matter it pumps is constant. The calculation of density of matter distributed is almost equal to the results of 'steady state theory'. According to this theory, the matter distribution is in order of  $4.542157 \times 10^{-42}$  kg cum<sup>-3</sup>sec<sup>-1</sup>.

The Siva's constant 'K' Is involved in all the above concepts related to physics of space time and cosmology

### 1.5 Equations Derived And Mentioned in 'Double Relativity'

- 1)  $V_{\text{observed}} = V_{\text{NC}} \cdot \gamma$   
Where  $V_{\text{NC}}$  is velocity of non-conventional particle  
 $\gamma = [1 - (V_{\text{NC}} / c)^2]^{-1/2}$
- 2)  $V_{\text{NC}}^2 c^2 - 2 V_{\text{NC}}^4 = c^2$   
This is a quadratic equation to find out the minimum and maximum non-conventional velocities i.e.  $V_{\text{min}}$  and  $V_{\text{max}}$  for the universe
- 3)  $V_{\text{min(observed)}} = V_{\text{min(NC)}} \gamma$   
Where  $\gamma = [1 - (V_{\text{min(NC)}} / c)^2]^{-1/2}$   
 $V_{\text{min(observed)}} = 1000 \text{ mts/ sec}$
- 4)  $V_{\text{max(observed)}} = V_{\text{max(NC)}} \gamma$   
Where  $\gamma = [1 - (V_{\text{max(NC)}} / c)^2]^{-1/2}$   
 $V_{\text{max(observed)}} = 2.997924578 \times 10^8 \text{ mts/sec}$
- 5)  $Vd = K$   
Where 'V' is the velocity by which any body will be attracted towards a c.g of any other body at a distance 'd' from the said c.g of that body and 'K' is Siva's constant.
- 6)  $t = 2H V_{\text{max(observed)}} / GM_G K$   
Where 't' is the quanta of universal time  
'H' is Hubble's constant  
'G' is universal Gravitational constant  
'M<sub>G</sub>' is mass of our 'local group'  
'K' is Siva's constant
- 7)  $t = 1.223186388 \times 10^{41} / K$   
Where 't' is quanta of universal time  
'K' is Siva's constant
- 8)  $d = \emptyset M_u$   
Where 'M<sub>u</sub>' is mass of the universe  
'd' is distance from the origin  
'∅' is a constant.
- 9)  $\emptyset = 8.161099581 \times 10^{-52} / K^2$   
Where 'K' is Siva's constant.
- 10)  $K^3 = (M_u / M_G) 2 C_0^2 H$   
Where 'K' is Siva's Constant  
'M<sub>u</sub>' is mass of the universe  
'M<sub>G</sub>' is mass of our 'local group'  
'C<sub>0</sub>' is  $V_{\text{max(observed)}} = 2.997924578 \times 10^8 \text{ mts/sec}$
- 11)  $K^3 = (M_u) 24.46636102 \times 10^{-44}$
- 12)  $K = 6.254459623 \times 10^{-15} (M_u)^{1/3}$

- 13)  $K^2 / C_0 = (M_u)^{2/3} 13.04844874 \times 10^{-38}$
- 14)  $n = K_G (M_B / M_u)^{1/3}$
- 15)  $n = 6.25445923 \times 10^{-15} (M_B)^{1/3}$   
Where 'M<sub>B</sub>' is the minimum mass of a celestial body to form a black hole.
- 16)  $K_a = n K_G$   
Where  $K_a$  is Siva's constant for atomic space-time  
 $K_G$  is Siva's constant for Gravity space-time
- 17)  $d_a = n K_G / C_0$   
Where 'd<sub>a</sub>' is dia of hydrogen atom
- 18)  $d_a = 13.048408 \times 10^{-38} (M_B)^{1/3} (M_u)^{1/3}$   
Where 'd<sub>a</sub>' is dia of Hydrozen atom  
'M<sub>B</sub>' is the minimum mass of a celestial body to form a black hole.  
'M<sub>u</sub>' is mass of the universe
- 19)  $(M_B) (M_u) = 5.330702179 \times 10^{80} \text{ kg}^2$
- 20)  $d_n = n^2 K_G / C_0$   
Where 'd<sub>n</sub>' is dia of nucleus.

The concept entitled 'Double Relativity Effect and its applications'[1] explained the situation when the dia. of whole universe less than the dia. of hydrogen atom. This has given some new concepts related to black holes, hydrogen atom, mass of the universe and mass of our 'local group. It was concluded in given below equations, which are in terms of Siva's constant 'K'.

Now to find out the value of 'K', it was assumed that the whole universe contracted to a lump of mass and that mass had become a black hole because of its abnormal gravitational attraction.

## 2 DERIVATION

### 2.1 The value of Siva's constant 'K'

Let us suppose the early stages of universe when the mass of the universe had such a strong gravity force which behaves like a huge black hole for which the radius is 'r' and the diameter is 'd'. But according to my theory the least dia of universe 'd' and the ' $V_{\text{min(observed)}}$ ' are related by the equation  $V_{\text{min(observed)}} = Hd$ . Where  $V_{\text{min(observed)}} = 1000 \text{ m/sec}$  (From equation no.3.) and Hubble's constant 'H' =  $1.7604 \times 10^{-18} / \text{sec}$   
∴ 'd' =  $V_{\text{min(observed)}} / H$   
=  $1000 / (1.7604 \times 10^{-18})$   
=  $5.680527153 \times 10^{20} \text{ mts}$

$$\therefore r = d/2 = 2.840263576 \times 10^{20} \text{ mts}$$

If the mass is a black hole then the escape velocity 'V<sub>e</sub>' around that mass is greater than or equal to velocity of light 'c' i.e. V<sub>e</sub> ≥ c

**For minimum condition V<sub>e</sub> = c**

We have V<sub>e</sub> = (2GM<sub>u</sub>/r)<sup>1/2</sup>

Where 'M<sub>u</sub>' is mass of the universe  
'G' is Universal Gravitational Constant.

'r' is radius of black hole formed due to 'M<sub>u</sub>'

$$\begin{aligned} \therefore c &= (2GM_u/r)^{1/2} \\ \therefore M_u &= c^2 r / 2G \\ &= 1.91299580 \times 10^{47} \text{ kgs.} \end{aligned}$$

**Case one**

Let us suppose Siva's constant 'K' for above 'M<sub>u</sub>' is 'K<sub>1</sub>' and 'n' is 'n<sub>1</sub>'

i) We have equation no.12 → K = 6.254459623 × 10<sup>-15</sup> (M<sub>u</sub>)<sup>1/3</sup>  
∴ K<sub>1</sub> = 36.03803743

(since M<sub>u</sub> = 1.91299580 × 10<sup>47</sup>)

ii) Equation no. 15 → n = 6.254459623 × 10<sup>-15</sup> (M<sub>B</sub>)<sup>1/3</sup>  
Where 'M<sub>B</sub>' is the minimum mass of any celestial body to form black hole  
(since V<sub>e</sub> = c ⇒ minimum condition)

Where  
M<sub>B</sub> = 2.786572859 × 10<sup>33</sup>

(since (M<sub>B</sub>)(M<sub>u</sub>) = 5.330702179 × 10<sup>80</sup> equation no.19)

(n<sub>1</sub> = 8.80129533 × 10<sup>-4</sup>)

(since M<sub>u</sub> = 1.91299580 × 10<sup>47</sup>)

iii) Equation no.8 → d<sub>0</sub> = ∅ M<sub>u</sub>  
Where ∅ = 8.161099581 × 10<sup>-52</sup> / K<sup>2</sup>

Siva's constant  
'K' = 36.03803743  
M<sub>u</sub> = 1.912995801 × 10<sup>47</sup> kgs.  
'd<sub>0</sub>' is field distance for mass 'M<sub>u</sub>'

∴ d<sub>0</sub> = 0.012020995 × 10<sup>-5</sup> mts.

At this stage the complete mass of the universe is in the size of hydrogen atom. So according to the concept 'Nuclear space-time' used in the paper "Double Relativity Effect and its Applications", the 'd<sub>0</sub>' will be increased by the factor 'n'. So 'd<sub>0</sub>' will become 'd<sub>0</sub>n' (or) 'M<sub>u</sub>' will be '(M<sub>u</sub>/n)'.

**Case Two**

Let us take the situation that 'M<sub>u</sub>' has been changed to '(M<sub>u</sub>/n)'

$$\begin{aligned} \therefore K &= 6.254459623 \times 10^{-15} (M_u/n)^{1/3} \\ \therefore K n^{1/3} &= 6.254459623 \times 10^{-15} (1.912995801 \times 10^{47})^{1/3} \end{aligned}$$

$$= 36.03803743$$

we have equation nos.12 → K = 6.254459623 × 10<sup>-15</sup> (M<sub>u</sub>)<sup>1/3</sup>  
Equation no 15 → n = 6.254459623 × 10<sup>-15</sup> (M<sub>B</sub>)<sup>1/3</sup>  
= 5.071284007 × 10<sup>12</sup> (M<sub>u</sub>)<sup>-1/3</sup>

[Since (M<sub>B</sub>)(M<sub>u</sub>) = 5.330702179 × 10<sup>80</sup>]

$$\begin{aligned} \therefore K n^{1/3} &= 36.03803743 \\ \Rightarrow 6.254459623 \times 10^{-15} (M_u)^{1/3} (5.071284007 \times 10^{12} (M_u)^{-1/3})^{1/3} \\ &= 36.03803743 \end{aligned}$$

$$\Rightarrow 10.74556125 \times 10^{-11} (M_u)^{2/9} = 36.03803743$$

$$\Rightarrow (M_u)^{2/9} = 3.353760366 \times 10^{11}$$

$$\therefore M_u = 7.326459043 \times 10^{51} \text{ kgs.}$$

Let us suppose Siva's constant 'K' for this 'M<sub>u</sub>' is 'K<sub>2</sub>' and 'n' is 'n<sub>2</sub>'

$$\therefore K_2 = 12.14752594 \times 10^2$$

[since equation no.12 ⇒ K = 6.254459623 × 10<sup>-15</sup> (M<sub>u</sub>)<sup>1/3</sup>]

$$\therefore n_2 = 26.11078273 \times 10^{-6}$$

[since equation no.15&19 ⇒ n = 5.071284007 × 10<sup>11</sup> (M<sub>u</sub>)<sup>-1/3</sup>]

Therefore we can say that the quantities 'M', 'K' and 'n' has been increased by factor 'Δ', when mass of the universe is 1.912995801 × 10<sup>47</sup> kg and 7.326459043 × 10<sup>51</sup> kgs.

Quantities in case one at mass 1.912995801 × 10<sup>47</sup> kg

$$\therefore \Delta = \frac{\text{Quantities in case one at mass } 1.912995801 \times 10^{47} \text{ kg}}{\text{Quantities in case two at mass } 7.326459043 \times 10^{51} \text{ kgs}}$$

$$\begin{aligned} \Rightarrow n_1 / n_2 &= \Delta n = 0.337075124 \times 10^2 \\ K_1 / K_2 &= \Delta K = 2.966697713 \times 10^{-2} \end{aligned}$$

$$\begin{aligned} M_1 / M_2 &= \Delta M_u = 0.261107827 \times 10^{-4} \\ \text{Where } M_1 &= 1.912995801 \times 10^{47} \text{ kgs.} \\ \text{And } M_2 &= 7.326459043 \times 10^{51} \text{ kgs.} \end{aligned}$$

If we consider the situation, when whole mass of the universe condensed to a point whose dia is 'd'. Then the product of the factor 'n' and 'd' is constant i.e. equal to dia of hydrogen atom (1.058 × 10<sup>-10</sup>mt).

So 'n' increases 'Δn' times implies that 'd' will increase by '1/Δn' times

$$\therefore \Delta d = 1/\Delta n = 1/(0.337075124 \times 10^2)$$

If we substitute this 'Δd' in the equation no.8 → d = ∅ M<sub>u</sub>

Then Δd = Δ∅. Δ M<sub>u</sub> since 'd' will change according to 'M<sub>u</sub>' and '∅'

$$\therefore \Delta \emptyset = \frac{1}{0.261107827 \times 10^{-4} \times 0.337075124 \times 10^2}$$

'Δ∅' is the factor by which the value of '∅' will be changed. This '∅' depends on Hubble's constant 'H' and Siva's constant 'K'.

i.e. Δ∅ = ΔH / ΔK (since 'M<sub>u</sub>' = c<sup>2</sup>r / 2G ; 'r' = V<sub>min(observable)</sub> / 2H  
⇒ M<sub>u</sub> ∝ 1/H and equation no.9 ⇒ increase of '∅' with decrease of 'K'.

So in order to satisfy all these conditions and equations we have to consider Δ∅ = ΔH / ΔK)

Equation no.10  $\longrightarrow K^3 = (M_U/M_G)2C_0^2H$

$\Rightarrow$  Any change in 'H' will change mass of universe 'M<sub>U</sub>' and corresponding 'K'.(Here we have taken 'M<sub>G</sub>', mass of our 'local group' as constant so, it will not change according to 'Ø')

$\therefore \Delta\emptyset = \Delta H / \Delta K \Rightarrow \Delta H = 33.70751243$

We have taken the value of Hubble's constant 'H' in all calculations as  $1.7604 \times 10^{-18}$ / sec

Therefore the correct or theoretical value of 'Hubble's constant' i.e.  $H_{th} = (H) / (\Delta H)$

$$= \frac{1.7604 \times 10^{-18}}{33.70751243}$$

$$= 5.2225746 \times 10^{-20}/\text{sec}$$

Now if we go back to the calculation of mass of the universe with the corrected or theoretical value of Hubble's constant i.e.  $5.2225746 \times 10^{-20}/\text{sec}$ .

Equation no.3  $\longrightarrow V_{\min(\text{observed})} = 1000 \text{ mt}/\text{sec}$

We know that  $V_{\min(\text{observed})} = H_{th} \cdot d$

$\Rightarrow d = V_{\min(\text{observed})} / H_{th}$

$\therefore r = d/2 = (1000/5.2225746 \times 10^{-20}) (1/2)$   
 $= 95.73822076 \times 10^{20} \text{ mts.}$

If the mass is a black hole then the escape velocity 'V<sub>e</sub>' around that mass is greater than or equal to velocity of light 'c' i.e.  $V_e \geq c$

**In minimum condition  $V_e = c$**

We have  $V_e = (2GM_U/r)^{1/2}$

$\therefore c = (2GM_U/r)^{1/2}$

$\therefore M_U = c^2r/2G$

$$\therefore M_U = \frac{(2.99792458 \times 10^8)^2 (95.73822076 \times 10^{20})}{2 \times 6.672 \times 10^{-11}}$$

$$= 6.448233042 \times 10^{48} \text{ kgs}$$

Now the correct value of mass of the universe has been found out as  $6.448233042 \times 10^{48}$  kgs.

Equation no.12  $\longrightarrow K = 6.254459623 \times 10^{-15} (M_U)^{1/3}$

$\therefore$  The correct value of 'K' =  $1.164135058 \times 10^2$  sqmt/sec

Equation no.19  $\longrightarrow (M_B) (M_U) = 5.330702179 \times 10^{80}$

$\therefore$  The minimum mass of any celestial body to become black hole i.e.  $M_B = 8.26691923 \times 10^{31}$  kgs.

**Note:-**

This theory has been concluded that the minimum mass of celestial body to become black hole i.e.  $M_B = 8.26691923 \times 10^{31}$  kgs. If this value does not match with the result of 'M<sub>B</sub>' achieved by any other means, the variation occurrence is due

to the quantity 'M<sub>G</sub>' i.e. mass of our 'local group' because, 'M<sub>G</sub>' is assumed to be constant and the values of 'M', 'K' and 'H' are inter dependent .So 'M<sub>G</sub>' has to be corrected accordingly.

**3. CONCLUSIONS**

- 3.1 The mass of the universe has been concluded as  $6.448233042 \times 10^{48}$  kgs
- 3.2 The corrected value of Hubble's constant is  $5.2225746 \times 10^{-20}/\text{sec}$
- 3.3 The value of Siva's constant 'K' is  $1.164135058 \times 10^2$  sqmt/sec
- 3.4 The mass of any celestial body to form black hole i.e. M<sub>B</sub> is dependent on the correctness of mass of our 'local group' of galaxies i.e. M<sub>G</sub>.  
If  $M_G = 1.293342 \times 10^{42}$  Kgs.  
Then 'M<sub>B</sub>' =  $8.26691923 \times 10^{31}$  kgs

Note:- Further research based on these concepts have corrected the above values exactly.

- 3.1 The mass of the universe has been corrected as  $6.448233042 \times 10^{48}$  kgs
- 3.2 The corrected value of Hubble's constant is  $5.2225746 \times 10^{-20}/\text{sec}$  ( no change)
- 3.3 The corrected value of Siva's constant 'K' is  $2.0275 \times 10^2$  sqmt/sec
- 3.4 The corrected mass of any celestial body to form black hole  
i.e.  $M_B = 2.962 \times 10^{30}$  kgs  
and  $M_G = 5.079 \times 10^{42}$  Kgs.

**REFERENCES**

- [1] S.P.Kodukula, *Double Relativity Effect & Film Theory Of the Universe* (ISBN 978-0-557- 07712-0).Raleigh, North Carolina.:Lulu.com, pp5-6, 7,12-38,2009.
- [2] S.P.Kodukula, *Cosmological focus on Particle Physics and Genetics* (ISBN 978055707724-3), Raleigh, North Carolina.:Lulu.com, pp1-13,2009.
- [3] S.P.Kodukula, *Heart of the God with Grand proof Equation - A classical approach to quantum theory* (ISBN 978-0-557-08995-6). Raleigh, North Carolina:Lulu.com,2009.
- [4] S.P.Kodukula, "New Cosmological Constants", ID no.1,FFP9,2008 <http://agenda.fisica.uniud.it/difa/contributionDisplay.py?contribId=1&confId=9> .Accessed on 10<sup>th</sup> Oct,2012.(Unpublished paper)
- [5] S.P.Kodukula, "Space Time Equivalence -A New Concept". *International journal of Scientific Research and Publications*, vol.2, No.10, pp.1-3, Oct,2012.
- [6] S.P.Kodukula, "Equation for consciousness in terms of Physics". *International journal of Advancements in Research & Technology* , vol.1, No.6, Nov,2012.