



MS-1

## SOME OBSERVATIONS ON SRICHAKRAM - AS MATHEMATICAL MODEL

T.J.NAGARAJAN

B17/12, TNHB Flats, Bagalur Rd.,  
Hosur-635 109

OM Sri Ganesaya Namaha

Gururbrahma Guruvishnu Gururdevo Maheswara  
Gurursakshath Parambrahma Thasmai Sri Gurave  
Namaha

Sthothram in SOUNDHARYALAHARI composed by Adhi Sankaracharya *Pradheepa jvalabir dhivasakara neerajanavidhi Sudhasoothaes chandhropala jalalavair-arkyarachana Swakeeyai-rambhobhihi salilanidhi-sowithyakaranam Thvadheeyabhir-vakbhis thava janani vacham sthudhiriyan ||*

Oh Mother of Gnana(Knowledge) My sthota to you just like showing camphor-light to Lord of light Surya,pouring coolness to the cool-light provided by Moon and taking water from the Ocean and offerring the same to Ocean as performing Rites,I am offering words(Vak) of praise to the Divine-Mother who is source of Speech(Vak)

**Mathematical Model-** Various methods are adopted in modeling Graphical presentation, Nomograph type to present value relationships in Mathematical Equations, Typical representation in the model to convey the concept ,number-ratio relationship in the process, projecting the principle of functioning of the system[process] in the model. SriChakram as Mathematical model falls in the third category type. About SriChakram Adhi Sankaracharya has given beautiful description in a Slokam in Soundharyalahari Chathurbhihi Srikandaihi Sivayuvathibhi panchabhirabhi Prabinnabhihi Sambhor-navavirabhi Moolaprakridhibhihi Chathurchatvarimsadh-vasudhala-kalaasra Thrivalayaha Thriekhabhihi Sartham Thavacharanakonaha Parinadhaha

In Srichakram ,there are nine avarnas.One inside another. They are:

1.Thrailokya Mohanam	(Square shape,three rows)
ObserverWorld	
2.Sarvasa paripoorakam	(Sixteen petal lotus)
3.Sarva Samkshopanam	(Eight petal lotus)
4.Sarva sowbhagya dhayakanm	(Fourteen triangles)
5.Sarvartha Sadhakam	(Outer ten triangles)
6.Sarva Rakshakaram	(Inner ten triangles)
7.Sarva Roga Haram	(Eight triangles pointed towards
eight directions)	
8.Sarva Siddhipradham	(Triangle)
9.Sarvananda Mayam	(Bindu)

From 4th Avarana to 9th Avarana Srichakram represents Hidden-World.

In Srichakram upasana literature, lot of concepts have been postulated to perceive Cosmos in Macro level and Micro level

and see Divineness in all things and Energy flow /charge pattern,have been given .It is not taken up in this paper as it will become quite exhaustive.

In order to bring out the mathematical representation of the concept in the configuration of the Srichakram, we have to derive some important constants. They are as follows:

(1)v  $N+1=n^*$ ,and  $v n^*+1=n^{**}$  and this process is repeated ,the value of  $n$  will end in a constant value, 1.618033989. This is called Golden constant. Since sq.root is considered it is for two-dimension.

(2)For three dimension we have to do similar exercise by applying method of finding cube root of  $N+1=n^*$  and next finding cube-root of  $n^*+1=n^{**}$ .so on.We will get a constant value for  $n$  at 1.324717957. It can be seen for initial Value of  $N$  greater than the above constant ,the value of  $n^*$  goes on reducing till it reaches the constant value 1.324717957. If initial value of  $N$  is less than the constant value the value of  $n^*,n^{**}$  goes on increasing till the value reaches 1.324717957. This constant is another Golden constant.

(3) To represent fourth dimension like time and space in graphical pattern,it will be more complex. But if the motion of object is cyclic with reference to centre,say circular or elliptical orbit we can derive certain constants which will cover the Rippling effect caused in space by motion of the Object in such orbits. If a point moves at a fixed distance  $r$  from center the distance swept by the point in one revolution is  $2\pi r$ .

If a sphere of unit radius(three-dimension) revolve round a central point, we can compare the ratio of (say K)volume swept per revolution to the volume of sphere of unit radius can be derived for different orbits with orbiting radius expressed in terms of radius of sphere orbiting round,  $K=$  Volume swept by the Sphere in one revolution devided by volume of the sphere, the following pattern will be seen.

Diameter of orbit	2	4	6	8	10	12
14						

Value of K	33/7	66/7	99/7	132/7	165/7	198/7
	231/7=33					

It can be seen that the value of K becomes whole number(in multiples of 33 for every radius incremental value of 7 units).Volume of Sphere of unit radius=4.19047619 unit cubes

(3) 1,3,6,10,15,21 ...are called Triangular numbers These numbers have a property as shown under

Number	Its cube value	sum of the cube values	Remarks
1	1	1	$(=1^2)$
2	8	9	$(=3^2)$
3	27	36	$(=6^2)$
4	64	100	$(=10^2)$



From the above table which can be extended for more numbers we can see that sum of cubes of numbers from 1 to n becomes equal to square of total value of sum of numbers from 1 to n (This property of cube to square pattern relationship is used by selecting placement of Triangles straight/ upside down)

#### Mass-Energy forms and Forces in the Universe

Energy in the Universe is of four forms—Solid, Liquid, Gas and Plasma While energy in solid, liquid and gas forms constitute about less than 10 percent, the one in plasma-state accounts for more than 90 percent of the total energy Plasma-state energy is of very high temperature & form of ionised gas-particles and can be contained only in Magnetic-field. It can conduct electricity. In order to give an idea about energy content of Plasma-energy as compared to other forms of energy the following sample is given. One gram of water/hydrogen in the form of Plasma - energy will be in the order of 160000 KWH.

Forces can be grouped in four categories—Gravity, Electromagnetic force, Weak nuclear force, strong nuclear force Now let us see what Rigveda depicts about creation "Before creation there existed Golden Womb(Hiranyagarbha) He was only the Lord of everything born. He holds Earth and Heaven"

Rigveda 10.121.1.

Cosmic Intelligence, unmanifested form of Mass-Energy combination, decides to expand. This Intelligence has no limitation ie. origin ,middle or end and not bound by any Mathematical, Physical Sciences laws(known to the Observer World). But the effect is manifestation of Unmanifested form with the Cosmic Intelligence embedded(interwoven in the fabric of material world) in all forms of manifestation. The manifested form comes under the control of Mathematical/Physical laws. When we discussed about Mathematical constant for three dimension- which is 1.324717957 -that becomes the limit for expansion. During expansion stage Gravity acts as opposing force to this expansion. As Gravity force follows inverse square law (diminishing with increase of distance from centre of attraction).

If we assume the mass which has expanded to unit radius value "1" gets deducted from 1.324717957. So the Mass-Energy multiplied by 0.324717957 divided by 1.324717957 remains in Manifested form. This is about 1/4th of the total.

#### Rigveda says about Purusha

"Such is his glory, there is even a Greater Purusha; All that is born is his one-fourth, His three-fourth is Immortal in Heaven" Rigveda 10.90.3

It is this 1/4th Observe World that is referred in the first three Avaranas of Srichakram.

#### Plasma Energy

We have earlier mentioned about this form of energy in the Universe. In the Solar System Earth has got magnetosphere caused by its poles and Plasma energy particles get entrapped

and form a ring around the Earth-Van Allen Belt. Sun's activity like sunspots, solar flares pump in Plasma particles and it is estimated that its Magnetosphere extends beyond the orbit of Pluto. Another occasion we come across Plasma energy during Natural phenomena Lightning . It is caused when positive ion charged cloud comes face to face with negative ion charged cloud / or the Earth surface and the intermittent space becomes conductor., the flash and thunder occurs. There is one category of Lightning called Ball-Lightning when energy balls (in the form of Plasma Energy) get entrapped in the magnetic field loops formed from the magnetic field generated due to flow of current during the process from +ve to -ve.

This entrapped energy ball moves alongwith route followed by magnetic loops and makes high temperature instantaneous burns on the body of contact. This takes place in fraction of a second. In Srichakram we can visualise formation of sets of loops by the circle encircling the triangles. If electric current is made to pass in such a manner that the magnetic lines/ rings fall in line with the loops formed by the Geometry of placement of triangles in Srichakram it can be made to contain plasma energy form If such harnessing of Plasma energy is done even in small scale it will be highly efficient and effective. In Srichakram the configuration of main-triangles with slope more than 1.324717957 will release energy and the other set with slope lower than the constant will absorb energy. This logic can be used for the transfer of energy (releasing and absorption) while harnessing energy in Plasma form.

The Principle of energy conversion from Plasma form to electricity is called MHD (Magneto HydroDynamics) In this way Srichakram symbolises and also demonstrate possible prototype model for Energy transfer from one form to other In harnessing Plasma energy a Magnetic- Well model is made in Laboratories to contain Plasma energy between magnetic fields and to arrest leakage of Plasma energy ,they use four current carrying bars which are named as Ioffe Bars . Now let us see come to the topic -flow of Plasma Energy from Sun. It produces Plasma storms during Sunspot activity. Its cycle is 11 years. Sun spins round its axis at the rate 25days / rotation at equatorial regions and 34 days/rotation at 40-50 deg latitudes..Because of this spinning, the magnetic-lines and Plasma flow in the form of spiral lines from surface of Sun. When Sun's flare is unipolar the plasma energy moves out of Sun to move towards the edge of Sun's Magnetosphere which extends beyond Plutos orbit. In Rigveda it is stated that flow of energy currents three times in a day. (Rigveda 3.56.6; 7.11.3; 9.86.18)

This explains the flow of cosmic energy in magnetosphere. Everything in the cosmic activity follows cyclic order. In Sri BhagawathGita a slokam indicates thus .

**Eavem pravarthitham chakram nanuvarthyateeha yaha  
Adhayurindhrayaaraamaha modham partha sa jeevathi ||**  
Chapter 3 -16.

From food beings become, from rain is food produced; from



Yajna rain proceeds; Yajna is born of karma; Know karma to have risen from Brahman (the supreme being) and Brahman is Imperishable; The all-pervading Brahman is therefore, ever engaged in yajna. He who does not follow on Earth the dynamic wheel of activity thus revolving, sinful of life and rejoicing in the senses, O Patha, lives in vain.

About Carbon-Nitrogen cycle in formation of galaxies and Energy cycle, Heat cycle, Carbon cycle, Oxygen cycle, Nitrogen cycle, Water cycle on Earth particulars are appended in the Annexure -1 for perusal.....

#### Genomic Science

In latest Researches in DNA coding study it is observed that cosmic Intelligence is embedded in each and every cell of creation and instrument provided by creation (Brain) to give expression to the coded intelligence.

This conforms to the Vedic Concept "Cause getting embedded in effect" An overview of details regarding DNA and RNA including the harnessing of Light Energy by molecules is given below. The complete set of instructions for making organisms is called Genomics. It contains all the master blueprint for all cellular structures and activities for lifetime of the cell organisms.

(More details about Genomics are given in Annexure2)

DNA contains 3 billion base pairs. The DNA and RNA combination produces about 72000 proteins. The distance between base pairs is in order of  $3.4 \times 10^{-10}$  metres. The 3 billion base pairs in the human Genome are organized into 24 distinct physically separate microscopic units called chromosomes. The number of human cells contain 23 set of chromosomes – 22 autosomes and x or y sex chromosome, Male will have 22 +xy ,Female will have 22+xx .

There are also Junk DNAs. They are ultra conserved elements which are more than 480 in number and are found identical in man, mouse and rat. They do not code for any protein but if overlapped they may be counted to RNA which in turn codes for protein. These sequences also help in RNA splicing.

Artificial light harnessing molecule-The fractal shaped molecules called dendrimers with tiny limbs branching out in all directions to capture ray of light and channel its energy into the molecular heart.. The team of chemists and theoretical physicists ran simulation over and over until they found the magic number for one particular family of dendrimers as '9'(number of branches) for optimum light harnessing.

#### Sabda Brahman

Now let us see how this is getting representation in SRICHAKRAM

"All that is born is his one fourth and his three-fourth is immortal in Heaven"

Rigveda 10.90.3

"Speech has four quarters, which knowledgeable people

know, three of them are hidden and not known by people. People speak only the fourth one" Rigveda 1.164.45

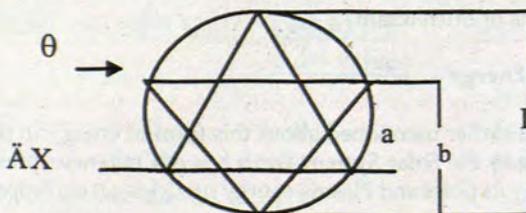
There are four stages before the speech comes out. They are Para, Pasyanthi, Madhyama and Vaikari. Vaikari is the final form as the speech comes out. The other three states are hidden form. Para is the form of unmanifested sound and is in navel region. Pasyanthi is one of the intermediate stage when the sound is perceived in chiththa (in the region heart). Madhyama is that next stage when the wind modulation is done in the throat region is done to express the form of sound as perceived and to be expressed. Vaikhari is the actual form of sound in speech (All these steps goes very fast in well co-ordinated manner) Sound vibrations has got RHYTHM/HARMONIC SRUTHI

**VOLUME/QUANTUM.** These forms exhibit themselves when sound waves travel in space (magnetically charged space) Vaikari gets exhibited in Observer world and other forms in hidden world.

In Srichakram saptha swarangal arohana and avarohana gets represented by 14 triangle chakram. The next two 10 triangle chakrams represents Madhyama and Pasyanthi forms as upadesa to Disciple by Guru with respective body currents in their regions. When Disciple brings down the Updhesa to Pasyanthi state in heart region he gets Anahatha Dhwani experience (as wave length falls in harmony-resonant sound). The next chakra with 8 triangles indicates the stage of contemplating on the Upadhesa and removing all his ignorance (condition of chiththa (mind) in doubtless state). In the next chakram one Triangle the disciple shows his thankful attitude to all the forms of Guru who has enlightened him in all aspect of Nadha and surrenders all his weapons of learning to the feet of Guru and enter the 9th Avarana-Bindhu where he gets the Glimpse and experience (as he is already merged in Para state of sound (Pranava) in which stage there is no one to tell and another to hear as both are merged) Thus this cosmic Intelligence is embedded in Srichakram form to enlighten the Sadhaka to understand and experience the Cosmic Intelligence. All these are possible when the created form (sadhaka) lives in harmony with both manifested Intelligence and cosmic Intelligence.

#### Discussion on Mathematical Model

If line of length L is divided in two parts with lengths a and b it can be represented in Geometrical form, by drawing a circle with L as diameter. We can get the representation of a+b, a-b, a x b, and a/b. It can be shown that a/b is equal to  $\tan(\text{square}) \theta$ , (ref sketch). In this line L gets divided into three parts.





In Srichakram configuration the line of length, L gets divided into 10 parts. If we make the incremental length of x (in portion of length a-b) is in the order of one divided by ten to the power of "n" mm, the total number of possibilities of division patterns will be  $3.3 \times 10$  to the power of  $2(n-1)$ .

Since the divisions of the line L is made in logical pattern, this configuration can be used in Micro level analysis of Cosmic creation. Energy available for creation and sustenance, major portion is in the form of Heat and Light. Plant kingdom harness the light energy in frequency range, blue to red. Frequency of different colours in mill. cycles per second are, - Violet 720, Indigo 658, Blue 622, Green 577, Yellow 535, Orange 506 and Red 458. If frequency of Violet 720 is represented by perimeter of semicircle the chord (i.e. diameter in this case will subtend 90 degrees at the perimeter of the circle) The isosceles triangle formed with the apex angle 90 degrees will have base angle 45 degrees. So  $\tan\theta$  will be tan 45 in this case. Similarly if we find out  $\tan\theta$  values for other colours taking arc length to represent frequency of the colour light the values will be as under.

Colour	frequency in mill.cyc./sec	$\tan\theta$ value
Violet	720	Tan45
Indigo	658	Tan48.875
Blue	622	Tan51.125
Green	577	Tan53.9375
Yellow	535	Tan56.5625
Orange	506	Tan58.375
Red	458	Tan61.375

A sample configuration of Srichakram using the colour frequency pattern of colours

Red,Orange, Blue,Indigo and Violet as representing its triangles is given under for perusal.

Distance of chord in mm (From top of circle) Tanθ value  
Colour range

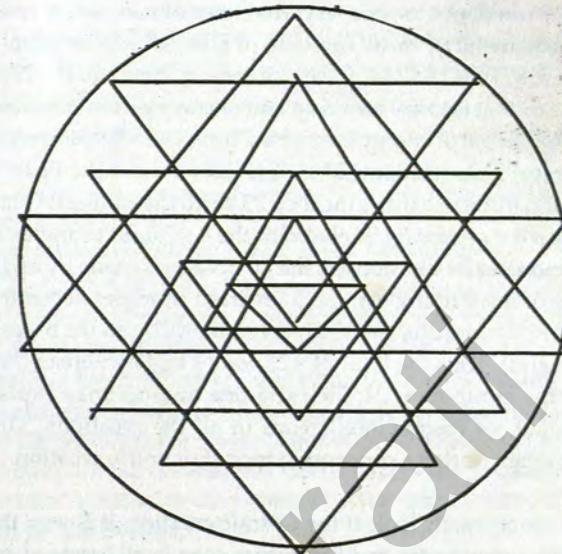
14.76705311	▽	1.174298655	Indigo-Blue
28.99435546	▽	1.529085516	Yellow-Orange
38.19660113	▽	1.27201965	Blue-Green
43.75473495	▽	1.56940543	Yellow-Orange
48.37455047	▽	1.000320731	Violet.

Distance of chord in mm Tanθ value  
(From top of circle)

55.76126316	Ā	1.443639118	Green-Yellow
61.80339887	Ā	1.27201965	Blue-Green
72.79803504	Ā	1.5664	Yellow
84.11245589	Ā	1.618033989	Orange

(Bottom of circle=100mm)

NOTE: Triangles of the SRI CHAKRAM straight & inverted are shown symbolically. Typical arrangement of triangles in Srichakram configuration is shown under.



**Arc length and Chord length relation:** When the difference between Arc length and chord length is one unit and the contained angle at centre is equal to one radian the value of radius is equal to 24.3.

**Some observations:** The concentric circles of trunk of tree will have a marked indication at 11<sup>th</sup> circle. For humans the vertebrae of spine are 33 in numbers(multiple of 11) In genetics it is seen multiples of 7 plays role. These shows the significance of embedding of cosmic intelligence in the creations. In Srichakram we see representation of 24 and 25 in male triangles(4 straight triangles) and female triangles(5 inverted triangles) respectively DNA grouping is 24 chromosomes, It is also noticed that there are some DNA which are not coded(called Junk by Scientific community)

THE ORDER OF RATIO between energy supplied by sun and other cosmic source. The sun is moving @ 156 miles/s and the orbital period about galactic center is 250 million years. Diameter of sun is 868000 miles. Rotation period of sun about its axis is 25 days for one rotation. It is observed that the distance moved in space in one rotation is more than the circumference of the sun.

Distance moved in space when making one rotation = Circumference of the sun.

$$25*24*3600*156=123.5687779 \\ \pi*868000$$

In the similar way in case of earth motion ratio will be 64.567, taking earth's diameter 7950 miles.. If E is the energy received by sun from Galactic centre and "e" is the energy received by earth from Galactic centre during the period of one rota-



tion of sun about its axis, and diameter of sun equal to 108 times diameter of earth the ratio of E to "e" will be equal to  $[123.5687779 * 108 / 64.567]^2$  divided by  $25 \cos 23.45 = 1862.69$ , that is to say for every unit of energy from sun ,about  $1/1862.69$  unit of energy is received from Galactic centre (cosmic rays) This relationship is derived to show the order of the ratio.(orbit of earth is inclined  $23.45^\circ$  to the equitorial plane of the solar system) In Srichakram the 4 straight triangles accommodates 24 divisions(of the 10 divisions made by all the bases of the 9 triangles), the 5 inverted triangles accommodates 25 divisions(of the 10 divisions made by all the bases of 9triangles). Thus the total 24 +25 comes to 49,whereas chromosome grouping is 24.The extra one number may explain the input of cosmic intelligence in all the creations. Thus Srichakram forms a conceptual model of entire creation.

If we conceptually look at the Cosmic creation ,it is seen that it follows clear order and Divinity is seen in all forms of creation The guideline of cosmic law is, living in harmony with Nature showing Love and Compassion to all beings and, live with a spirit of Parobhakra principle, with hearts full of love overflowing and spreading love and harmony....

#### OM SANTHI....

Purusha suktha hymns of Rig- Veda verses referred to , in this paper;10.90.3 Eatha vanasya mahimaatho jyayanscha purushaha Padhosya vishwa bhoothani thripadhasyamrudham dhiwi

10.90.4 Thripadhuthwam udhaithpurudhaha padhosyeaha bhavathpunaha

Thatho viswang vyakramathsashananasanane abhi 10.90.7 Sapthasyasan paridhayaha thrihi sapthasamidha kruthaha Dheava yaddhajnam thanvanaa abhdhnanaipurusham pasum