

BUILDING BLOCKS OF THE OBSERVABLE UNIVERSE

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The five fundamental particles called Pancabhūtas or space atoms are formed from five point particles called tanmātras by Quintuplication Principle. These fundamental particles or space atoms constitute the observable universe. In the language of mathematics, it can be shown as a linear transformation of one set of objects into another set of objects that is the transformation of point particles to fundamental particles.

INTRODUCTION

Quantum theory of Gravity describes space in terms of linked atoms of volume which united standard Quantum Theory with Einstein theory of Relativity. What are atoms of space? Modern science can't answer that yet. They are the truly fundamental building blocks of the observable universe as discussed in veda.

According to vedic wisdom Indra, Soma, Agni, Tvaṣṭa and Dhāta are the five

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point particles (Tanmātras), the primeval cause of the invisible universe or dark energy. The mātra of energy is a point particle which is fermionic. Indra force of repulsion, Soma charge, Agni cause of motion, Tvaṣṭa force of attraction are bosonic. The fermionic and bosonic attractions led to the formation of Dhāta a string¹⁻⁴. *These five tanmātras behave as seed like structures that led to the formation of cosmos on macrolevel through fundamental particles, pancabhūtas or space atoms which are formed by the quintuplication principle or pancikaranam⁵⁻⁷.*

QUINTUPLICATION

This principle can be stated as the five fundamental particles, pancabhūtas which constitute the observable universe are formed by the linear combination of five point particles, tanmātras. We can express this principle by Matrix equation I as shown below:

4/8	1/8	1/8	1/8	1/8
1/8	4/8	1/8	1/8	1/8
1/8	1/8	4/8	1/8	1/8
1/8	1/8	1/8	4/8	1/8
1/8	1/8	1/8	1/8	4/8

X

Dt
St
At
Ft
Vt

=

E
W
A
V
S

Pointparticles
(tanmātras)
fundamentalparticles
(pancabhūtas)

Here the five point particles, tanmātras represented by a column matrix denoted by the symbols Dt for Dhāta string, St for soma charge, At for Agni motion, Ft for force (it is the resultant of the force of attraction, Tvaṣṭa and the force of repulsion, Indra) and Vt for vibrations formed from the string Dhāta. *Here it should be noted that Dhāta is fermionic while the other four are bosonic. The subscript t represents tanmātra.*

The fundamental particles pancabhūtas are represented by the symbols E for earth, W for water, F for fire, V for vayu and S for space as per vedic terminology. In scientific terminology E represents particle related to matter,

W indicates charge, F motion, V force and S space. Space is the vehicle of vibrations.

How can we understand the significance of fractional numbers used in the above transformation? As per vedic wisdom point particles tanmātras become many folded in a sequence of apparent changes due to three states of energy known as gunās (modes). Rajas mode represents high energy state, sattva mode represents intermediate state and tamas mode represents low energy state.

This back ground gives us a way to explain the fractional numbers used in Matrix equation I. Let us take for example the formation of fundamental particle E. The corresponding equation is,

$$(1/2) Dt + (1/8) St + (1/8) At + (1/8) Ft + (1/8) Vt = E$$

ie.,

$$(4/8) Dt + (1/8) St + (1/8) Ft + (1/8) Vt = E.$$

The number 8 in the denominator represents the fact of eight fold with the triad of three modes that is gunās (rajas, sattva and tamas) while the rest are pentad of five point particles (tanmātras).

DISCUSSION

One can raise an objection against the above scheme. If the five fundamental particles, pancabhūtas are the products of some point particles, tanmātras, then there should be a scheme in which the five fundamental particles can be converted back into point particles.

Let us examine the inverse process of pancabhūtas reverting back to tanmātras. Following the rules of matrix algebra a reconversion of fundamental particles pancabhūtas to point particles tanmātras is represented by the matrix equation II.

7/3	-1/3	-1/3	-1/3	-1/3
-1/3	7/3	-1/3	-1/3	-1/3
-1/3	-1/3	7/3	-1/3	-1/3
-1/3	-1/3	-1/3	7/3	-1/3
-1/3	-1/3	-1/3	-1/3	7/3

5x5 Matrix

X	=										
<table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>E</td></tr> <tr><td>W</td></tr> <tr><td>A</td></tr> <tr><td>V</td></tr> <tr><td>S</td></tr> </table>	E	W	A	V	S	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>Dt</td></tr> <tr><td>St</td></tr> <tr><td>At</td></tr> <tr><td>Ft</td></tr> <tr><td>Vt</td></tr> </table>	Dt	St	At	Ft	Vt
E											
W											
A											
V											
S											
Dt											
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Ft											
Vt											
fundamental particles pancabhūtas	Pointparticles tanmātras										

Matrix Equation II.

For example from E the reduction to Dt is given by the equation.

$$(7/3) E - (1/3) W - (1/3) A - (1/3) V - (1/3) S = Dt.$$

Each of the four remaining tanmātras has a similar equation.

Here, the number 3 in the denominator indicates that the triad remains invariant when pancabhūtas are transformed back to tanmātras in dissolution. (7/3) in the matrix equation II is (1+4/3) which shows that I represents Dt and 4/3 is the sum of Dhāta tanmātras in rest of the four bhūtas. Hence the four terms containing the fact 1/3 appear with a negative sign in the reduction to a particular tanmātra.

If we use matrix equation I and carryout matrix multiplications, we find that matrix equation II becomes matrix equation III.

24/24	0	0	0	0
0	24/24	0	0	0
0	0	24/24	0	0
0	0	0	24/24	0
0	0	0	0	24/24

X

Dt
St
At
Ft
Vt

=

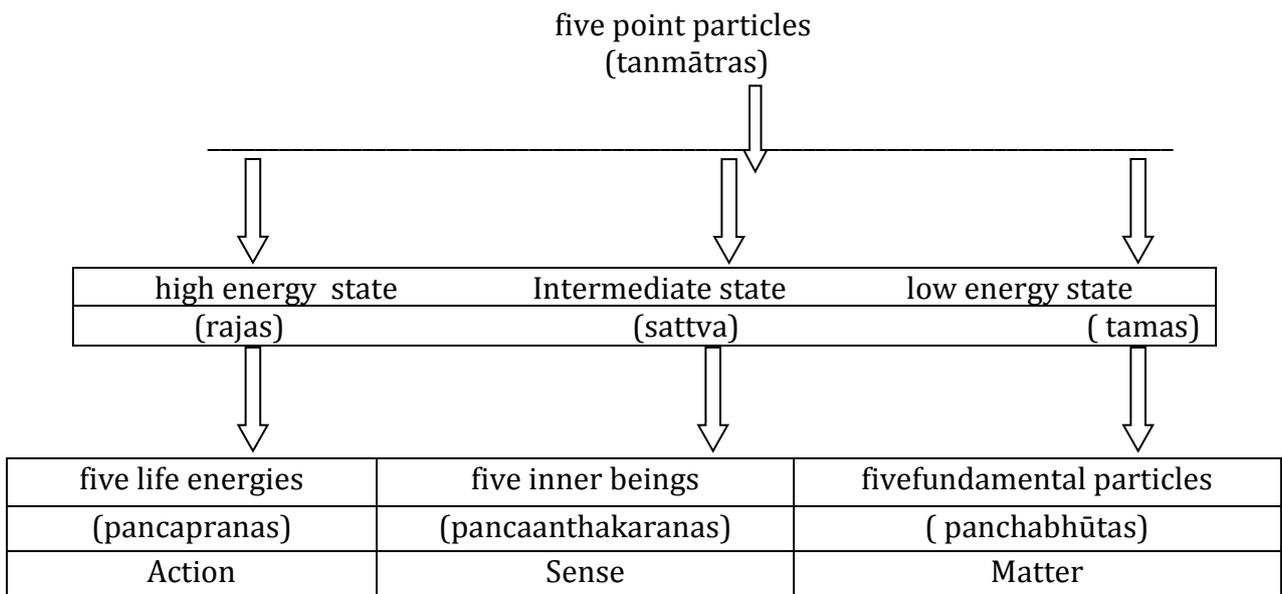
Dt
St
At
Ft
Vt

Matrix Equation III.

This clearly shows that fundamental particles are converted back into point particles. Thus *fundamental particles, pancabhūtas are formed from point particles during creation and pancabhūtas are transformed into point particles, tanmātras in dissolution.* This shows that the above objection has no valid base.

CONCLUSION

Based on vedic model, building blocks of the observable universe are formed by quintuplication (pancikaranam) of point particles, tanmātras.



Adharvaveda⁸ says that 'the ten Gods of earlier age, existing before the present gods, gave loka to their sons.

These ten devatas (celestials) are the first transition from the quiescent condition of Ahamkāra. They are five life energies and five inner beings.

Based on vedic literature there are sixteen fermionic and bosonic particles (tattvas) which are produced and unproducing including manas (Aham which means I) which is serving for both sense and action⁹⁻¹⁰.

REFERENCES

1. S.Sivarambabu, M. Arjuna Devi, K.Suresh Babu, Avogadro J. Chem., 1(2), 7-12, 2013.
2. Lisa Randal and Raman Sundaram, Phy. Rev. Lett.83, 3370-3373, 1999.
3. E.Witten, Nucl. Phys. B60, 335, 1995.
4. J.L.Gervais and B.Sakita, Nucl. Phy. B34, 632, 1971.
5. Shri S'ankara Bhagavatpada, Pancikaranam, Advaita Ashram, Delhi, 1972.
6. G.S. Murthy, Ganitadrukpathamuna Pancikaranam in Sri Sankara Krupa, T.H.S., Hyderabad, Vol.34, 1995.
7. G.Suryanarayana Murthy, The Two Facets of Geometry, ISERVE, Hyderabad, 2010.
8. Chaturveda Samhita, Adharvaveda, 11.8.10, V.S.P. Samithi, Hyderabad, 2002.
9. G.S.Kumari, S'ankhya Darsana (translation), ISERVE, Hyderabad, 2012.
10. Swamy Swarupananda, The Bhagavatgita (translation), Advaita Ashram, Culcatta, 1998.