

# HATIM'S THEORY WITH RESPECT TO MATTER, SPACE, TIME AND ENERGY FUNCTION OF OBJECTS IN THE UNIVERSE IN RELATION TO EINSTEIN'S UNIFIED OR GRAND THEORY OF MATTER, SPACE, TIME AND ENERGY PROBLEM OR CONJECTURE

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Let us assume that there are 'n' defining characteristics or mutually exclusive independent variables for a given object. Then, for the given object,

$$\begin{aligned} \text{Total Energy at any given time 't'} &= \sum (\text{Total energy for all the 'n' variables}) \\ &= \sum (\text{Kinetic Energy} + \text{Potential Energy}) \text{ of all the 'n' variables} \\ &= \sum (1/2 \times m_i \times (v_i)^2) + (m_i \times a_i \times h_i) \quad \forall I = 1 \text{ to 'n'} \end{aligned}$$

But we have already determined Energy of an object from equation 3) in the paper Energy of Machines (by the same author). In other words, using Integral Calculus

$$\text{Total Energy for an object at time } t = \int (1/2 \times m_i \times (v_i)^2) + (m_i \times a_i \times h_i) \quad \forall I = 1 \text{ to 'n'}$$

But all the variables mass, velocity, acceleration and height are a function of the value of nth variable and time t in equation 3) of above mentioned paper. Therefore,

$$\text{Total Energy for an object at time } t = \int (1/2 \times m_i \times (v_i)^2) + (m_i \times a_i \times h_i) \, dn_i \, dt \quad \forall I = 1 \text{ to 'n'}$$

$$\text{Total Energy for 'k' objects at time } t = \iint ((1/2 \times m_i \times (v_i)^2) + (m_i \times a_i \times h_i)) \, dn_i \, dt \, dk \dots\dots 1)$$

$$= E_k$$

$$\forall I = 1 \text{ to 'n'}$$

$$\forall k = 1 \text{ to } \infty$$

If this double integral can be evaluated we can get the Total energy of all objects in the Universe in terms of Matter, Space, Time and Energy.

Determining 'n' mutually exclusive independent variables from n + m variables where the 'n' variables are somehow dependant on the 'm' variables can be obtained as follows –

Let us assume that each of the 'n' variables is a mesh of some or all of 'm' variables of some kind. The root n th variables I believe can be determined utilizing eigenvalues and/or factorization (Refer to Standard Statistics and Marketing Research Applications textbooks

for Masters in Marketing Management courses from Mumbai University) in determining the nth variables from its dependents.

Let us take a case where there are no mutually exclusive independent variables in such a case it is advisable to assign a pseudo variable to any one of the nodes in the mesh, give it a suitable name and consider this variable as the single mutually exclusive independent variable, and again of course apply the above mentioned technique of eigenvalues / factorization to determine its value.

## CONCLUSION

It is apparent from the above discussion that all three variables Matter, Energy and Space are inter-related with each other by means of some pure number which is the value of the mutually exclusive independent variable and time which is the only other mutually exclusive independent variable in connection with Matter, Energy and Space. Also over and above the total energy of the Universe is a function of the number of objects 'k' in the Universe, obviously in the limits  $k \rightarrow \infty$ , which again in the total energy function, the integral with respect to 'k' I presume will result in only a numeric value, a function of k or maybe even  $\infty$  in which case the Total Energy of the Universe becomes indeterminate. If we presume a finite Universe then the Total Energy of the Universe can be said to be determinate and a function of k, the n mutually exclusive independent variables and the time t.