

## Brownian Motion

Mohammad Alim Rohani\*

Department of Physics, National University of Science and Technology, Islamabad, Pakistan

### Editorial

Received date: 27/07/2020

Accepted date: 21/08/2020

Published date: 30/08/2020

#### \*For Correspondence

Department of Physics, National University of  
Science and Technology, Islamabad, Pakistan

**E-mail:** saalimrohani855@gmail.com

### EDITORIAL

Nanobiotechnology is a new branch of science combining Cell Biology, Chemistry and Particle Physics. Here in this paper we try to attempt the explanation of Brownian Motion using the concepts of Dynamic Universe Model. We will try to modify SITA simulation software for using in this platform.

Brownian motion is well known. This can be seen in Liquids, gases easily and can be seen in solids with high end electron microscopes. For example, let's observe a single colloid with an optical microscope. Observe a  $2\ \mu\text{m}$  latex particle, which will undergo a constant motion in water within seconds of placing it in water in all the three dimensions. This random motion is called Brownian Motion. The sizes of the particles have a key role to play, the same type of motion is observed for colloids of  $1\ \text{nm}$  in diameter as well. This length corresponds to the size of single molecules, biomolecules such as DNA, RNA, proteins. They should therefore experience this type of motions.

Until now we have considered the system level equations and the meaning of  $\phi_{\text{ext}}$ . Now let's consider an ENSEMBLE of system consisting of  $N_1, N_2 \dots N_j$  point masses in each. These systems are moving in the ensemble due to mutual gravitation between them. For example, each system is a Galaxy, and then ensemble represents a local group. Suppose number of Galaxies is  $j$ , Galaxies are systems with point masses  $N_1, N_2 \dots N_j$ , we will consider  $\phi_{\text{ext}}$  as discussed above. That is we will consider the effect of only higher level system like external Galaxies as a whole, or external local groups as a whole.

A point to be noted here is that the Dynamic Universe Model never reduces to General relativity on any condition. It uses a different type of mathematics based on Newtonian physics. This mathematics used here is simple and straightforward. As there are no differential equations present in Dynamic Universe Model, the set of equations give single solution in  $x\ y\ z$  Cartesian coordinates for every point mass for every time step. All the mathematics and the Excel based software details are explained in the three books published by the author. Until now we have considered the system level equations and the meaning of  $\phi_{\text{ext}}$ . Now let's consider an ENSEMBLE of system consisting of  $N_1, N_2 \dots N_j$  point masses in each. These systems are moving in the ensemble due to mutual gravitation between them. For example, each system is a Galaxy, and then ensemble represents a local group. Suppose number of Galaxies is  $j$ , Galaxies are systems with point masses  $N_1, N_2 \dots N_j$ , we will consider  $\phi_{\text{ext}}$  as discussed above. That is we will consider the effect of only higher level system like external Galaxies as a whole, or external local groups as a whole.