

# Physics Undergraduate Seminar

Thursday, February 9<sup>th</sup> 2012, 10.00 am. Room P 620

## Stochastic Problem in Astronomy

By

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### Abstract

This topic comes from the reviews of Modern Physics wrote by S. Chandrasekha in 1943 focusing on the theory of the Brownian motion. The motion of the Brownian particles is maintained by fluctuations in the collision with the molecules of the surrounding fluid. We cannot speak of separate collision of particles because it's too frequent. Consequently, the modern theory starts with Langevin's equation and consider rather in the sense of specifying a probability distribution of particles having some parameters such as velocity  $v$  and time  $t$ . In my project, I concern the problem of particles in Brownian motion and under the influence of an external field of force so I use the result equation from this review. In the seminar, I will show derivation of some basic equations to help me solve the Stochastic Problem in my project.

**Keywords:** Brownian motion, S. Chandrasekha, Langevin's equation, Free particle, Astronomy.