# Einstein's Brownian motion for Chemotaxis system

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We study the movement of the living organism in a band form towards the presence of chemical substrate based on a system of partial differential evolution equations. We incorporate the Einstein's method of Brownian motion to deduce the chemotactic model exhibiting travelling band. It is the first time that Einstein method has been used to motivate equations describing mutual interaction of chemotactic system. In addition to considering Chemotactic response and the random motion of organism arising from chemotactic response, we also consider the formation of crowd by organism via interactions within or between the community. This crowd effect can also be seen as any organism travel or migrate in a herd/group in search of food. We have shown that under specific hypnotize on expected value of free jump of living organism from Einstein approach results in the Keller- Segel model. On the other hand, under no specific adjustment, traveling band has been yield and explained accordingly.