
BERN-FRIBOURG GRADUATE SEMINAR

a seminar for Master and PhD students

Thursday 15th December, 2022: 17:15 - 18:00

Room B5, Exakte Wissenschaften, Bern

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A agent-based model of bacterial chemotaxis

Abstract

Chemotaxis is the phenomenon by which organisms direct themselves or their movements according to a chemical stimulus present in the environment. Chemotaxis has been extensively studied mathematically, mostly using systems of differential equations. Here an original agent-based approach (each organism is modeled individually) based on the theory of Markov chain and biased random walks is presented. This model has been used on real data in a project with the department of fundamental microbiology of Lausanne.