



ID de Contribution: 5

Type: Oral presentation

## Survival probability of a run-and-tumble particle in the presence of a drift

jeudi 18 mars 2021 16:00 (20 minutes)

Brownian motion is certainly one of the most popular stochastic process to model particles in interaction with their surrounding environment. In its simplest form, Brownian motion is driven by an uncorrelated white noise induced by thermal fluctuations. Thanks to its universality, it has proven to be a successful model to describe a wide range of *first-passage* phenomena whereby a particular event, such as a financial stock reaching a stop price or a river overflowing its bank, relies on the system reaching a specified value *for the first time*. While many results exist on the first-passage time of the Brownian motion, very few are known for particles driven by correlated colored noise. In this talk, I will present recent analytical work on the first-passage times of *active particles* which are of timely interest as they naturally emerge in the context of living matter such as the *E. coli* bacteria, fish schools or bird flocks.

### Language

English

### Field

Statistical Physics

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**Classification de Session:** Oral presentations session

**Classification de thématique:** Physics