The group of D. Holcman (ENS) dedicated to Applied Mathematics and Computational biology offers the following training period at a Master or PhD level. Fields covered are stochastic processes, PDEs, asymptotic analysis, modeling in biology, numerical simulations and Big data analysis.

**Title:** Analysis of PDEs, spectrum of non-selfadjoint operator and escape of a stochastic process from a limit cycle.

**Project:** This project aims at studying non-standard stochastic dynamics. We propose to compute asymptotically the entire spectrum of the non-self-adjoint Fokker-Planck operator (FPO) for a two-dimensional dynamical system that has a singular point on the boundary of its domain of attraction, which is an unstable limit cycle. The goal is to obtain an explicit solution of the FPO when in addition the critical point of the basin of attraction is located very close to the limit cycle. This analysis is relevant in the context of extracting information from neuronal networks.

**Duration:** at least 6 months.

**Refs.**

**Candidate:** The candidate for this position is expected to be strongly motivated by mathematical and biological sciences. He/she should have a background in applied mathematics. The candidate should be passionate by her/his research. Students are encouraged to write a publication at the end of the training period. We strongly encourage student motivated to continue on a PhD thesis. The group has a strong tradition in training students that are joining top international institutions.

Applicants should send
- a letter of application,
- curriculum vitae,

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