Post-doctoral position in Computational Neuroscience/Statistical Physics at the Ecole Normale Supérieure (Paris, France)

We seek to recruit a post-doctoral research associate in Computational Neuroscience to work on a research program funded by the French National Research Agency (ANR) on the "Neural mechanisms of iterative learning". The algorithms and biophysical mechanisms underlying learning in biological neural systems are still poorly understood and the fundamental problem of "credit assignment" - how the correct neurons are modified to perform a difficult task such as optimising a complex movement - remains unsolved. An ideal preparation in which to study this problem using an interdisciplinary approach is the cerebellum, because it combines a simple, regular anatomical structure with well characterised model behaviours.

The aim of the project will be to explore different proposals for the biological implementation of credit assignment and learning, particularly in the context of cerebellar learning.

The project will be pursued as a collaboration between the team of V Hakim (http://www.phys.ens.fr/~hakim/) for the theoretical aspects and the team of B Barbour (https://www.ibens.bio.ens.psl.eu/?rubrique32&lang=en) for the experimental counterpart.

Applicants are expected to have a strong background in statistical physics, nonlinear dynamics or computational neuroscience, with a clear interest in the study of biological systems. They should be able to work interactively in a collaborative research environment including physicists and biologists.

Interested applicants should submit (1) a Curriculum Vitae (including publications), (2) a brief description of prior research, (3) a brief statement of scientific interests, and (4) contact information for three references as a single PDF file to vincent.hakim@ens.fr

The position is offered for a duration of 24 months with an expected start date between the spring and early fall of 2025.