



TOR VERGATA
UNIVERSITÀ DEGLI STUDI DI ROMA

Dipartimento di Fisica



European Research Council
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Seminar

Tuesday, 31 October 2023 - h. 14:30

Fisica della Materia room (Department of Physics)

Dr. Aurore Loisy

CNRS researcher at IRPHE, Aix-Marseille Université, France

“Deep reinforcement learning to uncover autonomous navigation strategies in turbulent flows”

Abstract

Navigation is about optimising a route to go from A to B. Animal and robotic navigation however fundamentally differ from the routing of planes or ships, because it is autonomous: the self-propelled "agent" has only access to information from its own sensors to make decisions. This type of problem is well-suited for reinforcement learning, a branch of artificial intelligence which has gained popularity by beating human players at games. In this talk I will show how we can leverage modern (deep) reinforcement learning techniques to solve two navigation problems inspired by the animal world: the vertical migration of plankton through the water column and the search for an odor source by insects.

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(P.I. Prof. Luca Biferale)

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