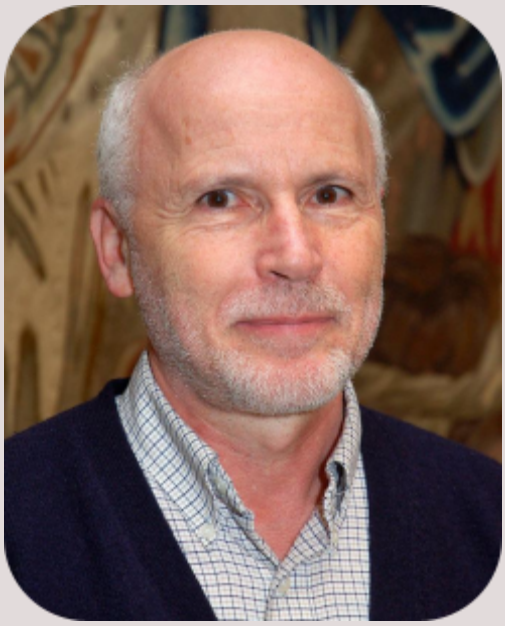
Lecture Series on Equilibrium and Nonequilibrium Statistical Mechanics (LENS 1)



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Visit For More :

https://actmatsmlab.github.io/Lecture-Series-On-Equilibrium-and-Nonequilibrium-Physics/

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Title of the talk :

COLLECTIVE MOTION:
From swarming bacteria through flocks of birds to group flight of robots

Talk abstract :

When advancing together, animals or people have to make collective decisions on the move in order to both achieve the given goal of their joint journey as well as stay together because the latter feature has many advantages. It turns out that a few basic ingredients of the decision-making process result in an interesting variety of complex behavioural patterns. In this lecture, examples ranging from coherently moving bacteria through birds to robots will be overviewed with the purpose of finding the most common rules underlying the large scale processes during collective motion. Among others, I shall discuss the case when the interactions within a group of animals can be interpreted as corresponding to a hierarchical network of leaders and followers. Such complex social behaviour will be presented for the collective motion of homing pigeons and groups of wild horses. At the end of the talk, I shall show examples of rich collective motion patterns arising when simple rules govern active particles and when autonomous drones fly together or exhibit trafficking

Date & Time :

November 14th , 2024 5:30 pm IST (1 pm CET)

Google Meet Link :

https://meet.google.com/ngd-uifw-eub