

**Collective Motions of Animals and Robots  
2024, May 27 – 31**

<https://lstu.fr/collectivecargese24>

**Preliminary program**

**Monday 27**

**Morning**

09:00 Welcome

09:15 - 10:30 Iker Zuriguel *Bottleneck flow of macroscopic active matter: animals and robots as a benchmark to understand pedestrian evacuations.*

11:00 - 12:15 Leticia Cugliandolo *Phases and topological defects in passive and active systems in two dimensions.*

**Afternoon**

14:00 - 15:15 Marina Papadopoulou *Animal groups into the Swarm-Verse: understanding collective motion across species & ecological contexts*

15:30 - 16:45 Short presentations

18:00 Welcome Party

**Tuesday 28**

**Morning**

09:15 - 10:30 Bertrand Maury *Paradoxical effects in collective motions : Capacity Drop and Faster is Slower effect*

11:00 - 12:15 Alexandre Nicolas *How to model the dynamics of pedestrians? -- Walking a fine line between game theory, physics and transportation science*

**Afternoon**

14:00 - 15 :15 Julien Pettré *Modelling and simulation of human crowds: the emergence of machine learning models and the question of training data.*

15:30 - 16:30 Short presentations

18 :00 Posters party

**Wednesday 29**

**Morning**

9 :15 - 10:30 Franck Rufier *From individual to collective behaviors based on optical flow*

11:00 - 12:00 Short presentations

**Afternoon**

14 :00 - 15 :15 Cécile Cottin Bizonne *Collective Motion: From Active Colloids to Driven Bacteria.*

15 :30 - 16 :00 Short presentations

18 :00 – 19 :00: Public conference (In French): Clément Sire *Quand de pauvres petits poissons sont confrontés à l'IA, la réalité virtuelle, des robots et des drones !*

## Thursday 30

### Morning

09:15 - 10 :30 Guy Theraulaz *Data-driven modeling of collective behavior in schooling fish*

11:00 - 12:15 Ramiro Godoy-Diana *Collective fish swimming dynamics: insights from laboratory experiments*

### Afternoon

14:00 - 15:15 Gil Ariel *Bacterial swarming: experiments and modelling*

15 :30 - 16 :30 Short presentations

18 :00 Poster & free discussion

20 :00 - Barbecue

## Friday 31

### Morning

09:15 - 10:30 Stefania Melillo *Characterization of lab-based swarms of Anopheles gambiae mosquitoes*

11:00 - 12:15 Hamid Kellay *From active and motile particles to flexible, deformable, and motile superstructures : a new type of soft robot*

### Afternoon

14:00 - 15:15 Clément Sire *Measuring the social interactions between fish and a robot-fish*

15:30-16:30 Short presentations

16 :30 General conclusions.