



## Interdisciplinary methods on collective behavior

Time	Speaker	Title
<b>Day1</b>		
08:00-08:10	Welcome	
<b>Chairs: Guangming Xie, Yufan Zhai</b>		
08:10-09:10	Heiko Hamann	Decision-making, human-swarm interaction, minimize surprise
09:10-09:30	Shuai Li	Isochron-based method for pursuit-evasion game
09:30-10:00	Coffee break & group photos	
10:00-11:00	Shiyu Zhao	Vision-based swarming of multi-robot systems: from theory to practice
11:00-11:30	Jian Zhao	Exploration and Practice of Intelligent Feeding in Industrial Aquaculture
11:30-11:50	Ruosi Liu	Burst-and-Coast-Inspired Efficient Swimming in Robotic Fish
<b>Chairs: Daniel S. Calovi, Kajal Kumari</b>		
13:00-14:00	Xiang-Yi Li Richter	Microbial collective behaviours: diversity, applications, and methodological challenges
14:00-15:00	Yanling Zhang	The evolution of prosocial behavior under indirect reciprocity
15:00-15:20	Coffee break	
15:20-16:05	Liang Li	Schooling fish: from biology to robotics and back
16:05-16:50	Jacob Davidson	Data-driven analysis of collective behavior of honey bees: Lifetime behavior, and synchronized hyperactive in-nest motion of reproductive drones
16:50-17:50	Iain Couzin	Collective Sensing and Decision Making in Animal Groups

JUNE 14<sup>th</sup>-15<sup>th</sup>, 2023

Conference Room 8, Xijiao Hotel,  
18 Wangzhuang Road, Haidian District, Beijing, China

Held by: Intelligent Biomimetic Design Lab  
Max Planck Institute of Animal Behavior  
Financed by: The Sino-German Center for Research Promotion



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Time	Speaker	Title
<b>Day2</b>		
<b>Chairs: Liang Li, Jacob Davidson</b>		
08:30-09:30	Guangming Xie	Bioinspired underwater robotics: current and future states
09:30-10:30	Yang Ding	Nonequilibrium active suspensions of hydrodynamically interacting bacteria and passive objects: a model for the pair dynamics
10:30-10:45	Coffee break	
10:45-11:15	Kajal Kumari	Inter-Individual differences and collective behavior in Juvenile Zebrafish
11:15-12:00	Daniel S. Calovi	Spatial Constraints and Dot Density Influence Zebrafish Response to Typical Optomotor Stimuli in Immersive Virtual Reality
<b>Chairs: Xiang-Yi Li Richter, Shiyu Zhao</b>		
13:00-14:00	Zhangang Han	Swarm robotic control scheme that unifies position and orientation of the agents
14:00-14:20	Yufan Zhai	Bionic Lateral Line System for robotic fish group
14:20-14:40	Qiye Yang	Electric Sense Based Localization for Small Underwater Robots in a Large-Scale Environment
14:40-15:00	Coffee break	
15:00-15:20	Yueheng Li	MDRL for circle formation control of robotic fishes
15:20-16:05	Liguo Zhou	BEV-based Path Planning for Autonomous Driving
16:05-17:00	Discussion	Brain Storming

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