

Participation canceled

Remote presentation via video conferencing will be checked

Participation unclear

Workshop

"Collective Information Processing - From Individual Sensory Inputs to Collective Behavior and Collective Decision Making",

Humboldt Universität zu Berlin, March 4th - 6th, 2020

Wednesday, March 4th

- 09:30 – 09:40am **Welcome & Opening** (Pawel Romanczuk)
- 09:40 – 10:20am **David Bierbach: Robofish – A biomimetic fish-like robot for the study of collective behavior**
- 10:20 – 10:40am **Valerio Sbragaglia: Harvesting-induced evolution of collective behavior in a fish**
- 10:40 – 11:00am Winnie Poel: Individual and Collective Encoding of Risk
- 11:00 – 11:30am **Coffee Break**
- 11:30 – 12:10am **Iain Couzin: The Geometry of Decision-Making**
- 12.10 – 14:00pm **Lunch break**
- 14:00 – 14:40pm **Nir Gov: Emergent problem solving behavior during collective transport by ants.**
- 14:40 – 15:00pm Benjamin Wild: Social networks through time - Individuality in a colony of honey bees
- 15:00 – 15:20pm Fernando Wario Vazquez: Motion dynamics of pre-dance trajectories in honey-bees
- 15:20 – 15:40pm Taeyeong Choi: Why Individual Tracking? Temporal Phase Prediction on Insect Society in Crisis using Global Visuals
- 15:40 – 16:00pm Leo Epstein: Learning an interpretable representation of Physarum polycephalum's behavioural ecology
- 16:00 – 16:30pm **Coffee Break**
- 16.30 – 18:00pm **Poster Session with beverages**

Thursday, March 5th

- 09:30 – 10:10am **Ariana Strandburg-Peshkin: Communication and collective behavior in animal societies**
- 10:10 – 10:30am Thejasvi Beleyur: How does jamming affect collective behaviour in echolocating bats?
- 10:30 – 11:30pm **Coffee Break**
- 11:30 – 12:10am **William Warren: A Visual Model of Collective Motion in Human Crowds**
- 12:10 – 12:30am **Renaud Bastien / P. Romanczuk: A Model of Movement Based on Vision**
- 12.30 – 14:30pm **Lunch break**
- 14:30 – 15:00pm **Mehdi Moussaid: Individual and collective response to nonstationary threats**
- 15:00 – 15:20pm Jonathan Donges: Caring for the future can turn tragedy into comedy for long-term collective action under risk of collapse
- 15:20 – 15:40pm Dylan H. Morris: A Social Dilemma of Sociality and Collective Processing
- 15:40 – 16:00pm **Madalina Vlasceanu: Collective Belief Update and Synchronization in Social Networks**
- 16:00 – 16:30pm **Coffee Break**
- 16.30 – 17:00pm **Cristián Huepe: Relating Emerging Collective Dynamics to Interaction Network Structures**
- 17:00 – 17:20pm Tanja Kaiser: Minimal Surprise - Evolving Swarm Behaviors with an Intrinsic Driver
- 17:20 – 17:40pm Pascal Klamser: Collective Predator Response: Group vs. Individual Optima and Criticality
- 17:40 – 18:00pm **Mari Kawakatsu: Evolutionary dynamics of polarization and cooperation in group-structured populations**

Friday, March 6th

- 09:30 – 10:10 am **Gonzalo de Polavieja: Modelling animal interactions as the sensorimotor transformation compatible with a desired global behavior**
- 10:10 – 10:30 am Wataru Toyokawa: Collective rescue: social reinforcement learning promotes adaptive behavioural-shift in risky decision-making
- 10:30 – 10:50 am Daniel Cooney: PDE Models of Multilevel Selection and the Evolution of Cooperation

10:50 – 11:20 am	Coffee Break
11:20 – 12:00 am	Benjamin Judkewitz: Tiny brain but rich behavior in the singing fish <i>D. translucida</i>
12:00 – 13:00 pm	Concluding session with open discussion
13:00 pm	End of Workshop

Poster Session, Wednesday 4th, 16:30-18:00h

Poster (preferably portrait format)

Eneko Aspillaga: *Unveiling the behavioural variability and social structure of wild fish populations using high resolution acoustic telemetry*

Juliane Lukas: *Waving at the enemy: the adaptive anti-predator behavior of two extremophile poeciliids*

Adrian Palacios Munoz: *Dissection of social interactions during male-male courtship behavior in *D. melanogaster**

Eduardo Sampaio: *Disentangling multi-partner effects on decision-making and cognition in interspecific collaborative hunting between octopus (*Octopus cyanea*) and fishes.*

Claudia Winklmayr: *Wisdom Of Stalemates*

Benjamin Wild: *Social networks through time - Individuality in a colony of honey bees*

Yinong Zhao: *The full phase diagram of a simple alignment model and the validity of Toner-Tu Theory*

Invited plenary talks: 35min+5min discussion

Plenary talks: 25min+5min discussion

Contributed talks: 15min+5min discussion

Invited plenary speakers:

Iain Couzin (Uni Konstanz / MPI for Animal Behavior, Konstanz)

Nir Gov (Weizmann Institute)

Benjamin Judkewitz (Charité Berlin / BCCN Berlin)

Gonzalo de Polavieja (Champalimaud Neuroscience Program)

Ariana Strandburg-Peshkin (Uni Konstanz / MPI for Animal Behavior, Konstanz)

Guy Theraulaz (CNRS, Research Center on Animal Cognition, Toulouse)
William Warren (Brown University, USA)

Plenary speakers:

Cristian Huepe (CHuepeLabs & Northwestern University, USA)
Mehdi Moussaid (MPI for Human Development, Berlin)