



MMEE2024

Mathematical Models in Ecology and Evolution

July 15-18, 2024
Vienna, AUSTRIA

Monday, Jul 15

Plenary talk 1 (HS01)

09:00 - 09:45: **Amaury Lambert** *"99 years after: modernity and revival of Yule's mathematical theory of evolution"*

09:45 - 10:15: Coffee Break

10:15 - 12:00: **MS: Evolutionary Dynamics of Prosocial Behaviours under Incentives** (HS07)

- **Calina Durbac** *"Cost optimisation of hybrid institutional incentives for promoting cooperation in finite populations"*
- **Genki Ichinose** *"Zero-determinant strategies and their extensions"*
- **Cedric Perret** *"A theoretical investigation of the evolutionary dynamics of institutional rules"*
- **Laura Schmid** *"Quantitative assessment can stabilize indirect reciprocity under imperfect information"*

10:15 - 12:00: **MS: Self-organisation in systems of interacting agents** (HS09)

- **Michael Fischer** *"Flocking models in social sciences"*
- **Gaspard Jankowiak** *"A mean-field approximation for network-based opinion dynamics"*
- **Leo Meyer** *"Two species model of interacting agents : an application to neuron migration"*
- **Carmela Moschella** *"Vicsek-Kuramoto system in collective dynamics and their macroscopic equations"*

Changing environments: Eco-evolutionary responses to change (HS02)

10:15 - 10:40: **Jerome Cavailles** *"Bleaching as a result of coral optimization in a changing environment"*

10:40 - 11:05: **Hong Sung Jin** *"Assessment of the spread of 7 invasive species under three climate change scenarios in Korea using rule learning of elementary cellular automata"*

11:05 - 11:30: **Simon Leoz** *"Adaptation to biotic versus abiotic change - navigating conflicting"*

selection pressures in competitive communities"

11:30 - 11:55: **Dominic Robson** *"A model for tree migration constrained by palaeoecological data"*

Ecosystem instability and tipping points (HS08)

10:15 - 10:40: **Manuel Esser** *"Fitness valleys and multi-scale analysis in changing environment"*

10:40 - 11:05: **Benedict Fellows** *"The induction of tipping points due to phenotypic plasticity driven feedback mechanisms"*

11:05 - 11:30: **Jayant Pande** *"Mean time to extinction in a fluctuating environment"*

Evolution and evolutionary dynamics : Mutualism (HS03)

10:15 - 10:40: **Nandakishor Krishnan** *"Modelling the evolution of ectosymbiosis in the context of eukaryogenesis"*

10:40 - 11:05: **Thomas Marcou** *"Evolutionary emergence of plant and pollinator polymorphisms in consumer-resource mutualism"*

11:05 - 11:30: **Daniel Jorge** *"Friends without benefits: The evolution of multicellularity in adverse conditions"*

Evolutionary epidemiology (HS01)

10:15 - 10:40: **Elizabeth Trevenen** *"Optimal strategies for controlling pathogen outbreaks and pathogen evolution towards virulence"*

10:40 - 11:05: **Raphael Eichhorn** *"On a neutral host-virus model with applications to HCMV"*

11:05 - 11:30: **Cameron Smith** *"Defensive symbiosis - tales from an uneasy alliance"*

11:30 - 11:55: **Shalu Dwivedi** *"Analyzing the dynamics in defense/counter-defense games among hosts and pathogens"*

Evolutionary graph theory (HS05)

10:15 - 10:40: **Oana Carja** *"Topological puzzles in biology: how structure shapes a system's evolution"*

10:40 - 11:05: **Max Souza** *"On a continuous approach to fixation on graphs with large populations: the star as a paradigm"*

11:05 - 11:30: **Natalya Slyeptsova** *"Natural death rate drives star graphs from amplifiers to suppressors of natural selection"*

11:30 - 11:55: **Ryosuke Iritani** *"Evolution in graph-structured populations"*

12:00 - 13:30: Lunch

13:30 - 15:15: **MS: The evolution of life cycles and mating systems (HS09)**

- **Jonathan Henshaw** *"Hermaphroditic origins of anisogamy"*

- **Thomas Lesaffre** *"An adaptive hypothesis for the prevalence XY over ZW sex determination when dioecy evolves from hermaphroditism"*

- **Roman Stetsenko** *"The effect of selfing on the mutation load near a site under balancing selection"*

Antibiotic resistance (HS01)

13:30 - 13:55: **Johannes Kippnich** *"The efficiency of resensitizing CRISPR-encoding plasmids"*

for the treatment of AMR bacteria"

13:55 - 14:20: **Emma Acacia** *"Recombination among plasmids boosts their fitness and the spread of antibiotic resistance genes"*

14:20 - 14:45: **Peter Csuppon** *"Antibiotic resistance evolution: Assessing the effect of different drug doses and types"*

14:45 - 15:10: **Rémi Tuffet** *"Towards an Evolutionary Ecology of Bacterial Mobile Genetic Elements"*

Biological interaction networks (HS05)

13:30 - 13:55: **Tiago Peixoto** *"Reconstruction of biological networks from population data"*

13:55 - 14:20: **Mateusz Iskrzyński** *"Higher-order interactions and digraph generalisations"*

14:20 - 14:45: **Franziska Koch** *"Skewness enables stabilising effect of hierarchy in complex competition networks"*

14:45 - 15:10: **Kalle Parvinen** *"Evolution of dispersal in metapopulation models"*

Changing environments: Ecosystem instability and tipping points (HS02)

13:30 - 13:55: **Moein Khalighi** *"Stability Landscape Dancing with Memory"*

13:55 - 14:20: **Andrew Morozov** *"Regime shifts, extinctions and long transients in discrete-time models of population dynamics"*

14:20 - 14:45: **Léonard Dekens** *"Sharp habitat shifts, evolutionary tipping points and rescue: quantifying the perilous path of a specialist species toward a refugium in a changing environment"*

Evolution and evolutionary dynamics: Kin selection (HS03)

13:30 - 13:55: **Roman Zug** *"The Matthew effect in biology, or: do social insect queens really reverse the fecundity-longevity tradeoff?"*

13:55 - 14:20: **Nobuto Takeuchi** *"Low relatedness can drive the evolution of reproductive division of labour"*

14:20 - 14:45: **Talia Borofsky** *"The Eco-evolutionary Feedback between Cooperative Hunting and Reproductive Skew"*

14:45 - 15:10: **Boyu Zhang** *"Kinship can hinder cooperation in heterogeneous populations"*

General concepts in ecology (HS07)

13:30 - 13:55: **Andrei Sontag** *"Emergence of multiscale patterns from population diversity of interaction ranges"*

13:55 - 14:20: **Mark Broom** *"Biological modelling: some average research"*

14:20 - 14:45: **Maria Alejandra Ramirez** *"Chaos and noise: disorder in population dynamics"*

14:45 - 15:10: **Phuong Nguyen** *"Inferring intrinsic population growth rates and per capita interactions from ecological time-series"*

Waves in ecology and evolution (HS08)

13:30 - 13:55: **François Ged** *"A general fitness wave framework for adaptive evolution"*

13:55 - 14:20: **Beth Stokes** *"Speed and shape of population fronts with density dependent diffusion"*

14:20 - 14:45: **Cornelia Pokalyuk** *"On the spread of an infection in a spatially distributed host population with immunity"*

14:45 - 15:10: **Colin Desmarais** *"A branching random walk with noisy selection"*

15:15 - 15:45: Coffee Break

Plenary talk 2 (HS01)

15:45 - 16:30: **Nick Barton** *"A diffusion approximation for the joint distribution of population size and allele frequencies"*

Plenary talk 3 (HS01)

16:30 - 17:15: **Alison Etheridge** *"Forwards and backwards in spatially heterogeneous populations"*

17:30 - 20:30: Welcoming reception (wine/cheese) and poster session

Tuesday, Jul 16

Plenary talk 1 (HS01)

09:00 - 09:45: **Judith Bronstein** *"Promising Directions in Mutualism Theory"*

09:45 - 10:15: Coffee Break

10:15 - 12:00: **MS: Developing more realistic finite population evolutionary models** (HS09)

- **Hasan Haq** *"The effect of herding and dispersal on the evolution of cooperation"*
- **Hana Krakovska** *"Beyond Two Player Interactions in Ultimatum Game"*
- **Javad Mohamadichamgavi** *"The impact of time delay on mutant fixation in evolutionary games"*
- **Diogo Pires** *"The simple rules of multiplayer cooperation in networks of communities"*

10:15 - 12:00: **MS: Population Dynamics Across Interacting Networks or Scales** (HS08)

- **Hayriye Gulbudak** *"Multi-Scale Models of Infectious Disease Dynamics and Validating with Data"*
- **Burcu Gürbüz** *"An analysis of a mathematical model of a reaction-diffusion system"*
- **Pierre Haas** *"Two Stories of Stability and Structure in Ecological Communities"*
- **Thomas Van Giel** *"Unveiling Ecological Dynamics through the Integration of Higher-Order Interactions (HOIs) and Individual-Based Models (IBMs)"*

Collective behavior (HS07)

10:15 - 10:40: **Jitesh Jhavar** *"Mathematical models of collective behaviours across systems"*

10:40 - 11:05: **Anna Sigalou** *"Markov models of sequential decision-making for social animal groups"*

11:05 - 11:30: **Merlijn Staps** *"Ecological principles for the evolution of communication in collective systems"*

Complex social interactions (HS03)

- 10:15 - 10:40: **Małgorzata Fic** *"Kindergarten Model: Approximating Time Delays in Evolutionary Games"*
- 10:40 - 11:05: **Nikoleta Glynatsi** *"Conditional cooperation with longer memory"*
- 11:05 - 11:30: **Marta Couto** *"The evolution of boundedly rational learning in games"*
- 11:30 - 11:55: **Felix Jäger** *"From friend to foe and back again - Coevolution of partner preference and degree of cooperativeness drives transitions in the mutualism-antagonism continuum"*

Epidemic control and surveillance (HS01)

- 10:15 - 10:40: **Adam Lampert** *"Optimal removal of host plants to slow the spread of invasive insects"*
- 10:40 - 11:05: **Marine Courtois** *"Multiple mating: a threat?"*
- 11:05 - 11:30: **Sophie Chervet** *"Can we estimate epidemiological parameters of respiratory viruses from prospective household studies ? - Impact of study design"*
- 11:30 - 11:55: **Cherie Yu** *"Optimizing disease surveillance in Pteropus Lylei using a mechanistic ecological-epidemiological model"*

Evolution and evolutionary dynamics: Eco-evolutionary dynamics (HS05)

- 10:15 - 10:40: **Krzysztof Argasinski** *"Growing up and feeling like a loser. Impact of maturation delay on the eco-evolutionary game dynamics in changing environment."*
- 10:40 - 11:05: **Shovonlal Roy** *"New insights on animal size evolution using an eco-evolutionary model"*
- 11:05 - 11:30: **Shikhara Bhat** *"Eco-evolutionary dynamics for finite populations and the noise-induced reversal of selection"*
- 11:30 - 11:55: **Sabrina Gastebois** *"Masting modeling: evolution towards an early phenology to control seed consumers."*

Tumor growth and evolution (HS02)

- 10:15 - 10:40: **Frank Bastian** *"A conceptual cancer development model with time-varying extinction threshold: Breast cancer case study"*
- 10:40 - 11:05: **Christo Morison** *"Cancer-immune coevolution dictated by antigenic mutation accumulation"*
- 11:05 - 11:20: **Alexander Stein** *"The mutational landscape in cancers before and after treatment"*

12:00 - 13:30: Lunch

13:30 - 15:15: MS: Branching systems as models for structured populations (HS07)

- **Alice Callegaro** *"Survival and complete convergence for a branching annihilating random walk"*
- **Félix Foutel-Rodier** *"Emergence of multiple mergers from population structure: the case of semi-pushed fronts"*
- **Emma Horton** *"Genealogies of branching Markov processes"*
- **Anton Wakolbinger** *"From clonal interference to Poissonian interacting trajectories"*

13:30 - 15:15: **MS: Experimental and Modelling Approaches to Understanding Macroecological Patterns (HS08)**

- **Sandro Azaele** *"Patterns and coexistence in large ecosystems driven by non-Gaussian interactions"*
- **Silvia De Monte** *"Chaotic turnover in a model of strongly interacting species"*
- **Emil Mallmin** *"Turnover of rare and abundant species due to unstructured ecological differences"*

Evolution of cooperation (HS02)

- 13:30 - 13:55: **Éloi Martin** *"Evolution of cooperation and assortment"*
- 13:55 - 14:20: **Florian Labourel** *"Public Goods and the evolution of strategic altruism"*
- 14:20 - 14:45: **Christian Hilbe** *"Efficiency and resilience of cooperation in asymmetric social dilemmas"*
- 14:45 - 15:10: **Tatsuya Sasaki** *"Integrated Indirect Reciprocity and the Evolution of the Open Society"*

Evolutionary concepts (HS09)

- 13:30 - 13:55: **Daniel Weinreich** *"The Evolution of Phenotypic Noise"*
- 13:55 - 14:20: **Theodore Galanthay** *"Evolution of aggression in consumer-resource models"*
- 14:20 - 14:45: **Zhijun Wu** *"Evolution of Multilingual Populations, Its Stable/Unstable Equilibrium, and the Extinction/Coexistence of Languages"*
- 14:45 - 15:10: **Vincent Jansen** *"Different fitness interpretations for the same evolutionary model: on Hamilton's rule, inclusive fitness theory and adaptive dynamics and the connections between them"*

Microbial communities: Complexity and stability (HS03)

- 13:30 - 13:55: **Thomas Clegg** *"The Structural and Dynamic Determinants of Microbial Community Stability"*
- 13:55 - 14:20: **Ksenia Guseva** *"Substrate complexity shapes the interactions within microbial consortia: a theoretical study"*
- 14:20 - 14:45: **Thomas Koffel** *"Metabolically structured population models: a unifying framework for microbial ecology and evolution"*
- 14:45 - 15:10: **Chania Clare** *"Bacterial Microcompartments: how dynamic nutritional niches can shape microbial communities"*

Mutualistic interaction and invasion (HS01)

- 13:55 - 14:20: **Tomás Revilla** *"A model for plant-pollinator interaction with separation of pollen and nectar dynamics"*
- 14:20 - 14:45: **Kwame Osei Bonsu** *"A novel approach for developing partial differential equation models of invasive species"*

Speciation and phylogenies (HS05)

- 13:30 - 13:55: **Julio Ayala-Lopez** *"The interaction between overdominant heterosis and hybrid incompatibilities"*
- 13:55 - 14:20: **Hilde Schneemann** *"From heterosis to reproductive isolation: unravelling the role of genetic interactions in hybrid fitness"*

14:20 - 14:45: **Bayu Brahmantio** *"Bayesian inference of mixed Gaussian phylogenetic models"*
14:45 - 15:10: **Chris Venditti** *"Studying within and between species encephalisation in hominins using phylogenetic comparative methods"*

15:15 - 15:45: Coffee Break

Plenary talk 2 (HS01)

15:45 - 16:30: **Oskar Hallatschek** *"Microfluidic island biogeography"*

Plenary talk 3 (HS01)

16:30 - 17:15: **Helene Morlon** *"Towards process-based comparative models for bridging micro and macroevolutionary speciation research"*

Wednesday, Jul 17

Plenary talk 1 (HS01)

08:45 - 09:30: **Guy Sella** *"When should adaptation arise from a highly polygenic response versus few large-effect changes?"*

09:30 - 10:00: Coffee Break

10:00 - 11:45: **MS: The evolution of genetic architecture** (HS08)

- **Isabela do O** *"The Evolution of Genetic Covariance Between Traits as Result of Multigenerational Environmental Fluctuations"*

- **Ewan Flinham** *"The evolution of genetic architecture across spatial scales"*

- **Carl Mackintosh** *"Locally adaptive inversions in structured populations"*

Cancer treatment (HS02)

10:25 - 10:50: **Peter Bayer** *"Games and the treatment convexity of cancer"*

10:50 - 11:15: **Katerina Stankova** *"Game theory to design evolutionary therapy in non-small cell lung cancer"*

Game theory: Multiplayer games (HS01)

10:00 - 10:25: **Fabio Chalub** *"Population dynamics and games of variable size"*

10:25 - 10:50: **Hong Duong** *"Random evolutionary games and random polynomials"*

10:50 - 11:15: **Maria Kleshnina** *"Optimal sharing in social dilemmas"*

Microbial communities: Seeking the drivers of community dynamics (HS05)

10:00 - 10:25: **Anthony Sun** *"Symbolic regression algorithm sheds light on resource dimensionality in microbial ecology"*

10:25 - 10:50: **Loïc Marrec** *"Drivers of within- and between-host diversity during stochastic microbial community assembly"*

10:50 - 11:15: **Sean Darcy** *"Exploring the inference potential of species co-occurrence data - From sampling scales to drivers of community assembly"*

11:15 - 11:40: **Aniello Lampo** *"Sparse species interactions reproduce abundance correlation"*

Phenotypic plasticity (HS07)

- 10:00 - 10:25: **Dhanya Bharath** *"Individual variation and plasticity in tactic use in a producer-scrounger game: a threshold trait model"*
- 10:25 - 10:50: **Ata Kalirad** *"The role of phenotypic plasticity in the ecological theatre"*
- 10:50 - 11:15: **Daniel Romero Mujalli** *"Emergence of phenotypic plasticity through epigenetic mechanisms"*
- 11:15 - 11:40: **Dharanish Rajendra** *"The effect of early life experiences on learning in jumping spiders: A reinforcement learning model"*

Population genetics: Branching processes (HS03)

- 10:00 - 10:25: **Alejandro Hernandez Wences** *"Self-similarity: a new perspective in population genetic models."*
- 10:25 - 10:50: **Su-Chan Park** *"Branching with selection and mutation : Mutant fitness of Fréchet type"*
- 10:50 - 11:15: **Sophia-Marie Mellis** *"Coalescents with Migration in the Moderate Regime"*
- 11:15 - 11:40: **Vianney Brouard** *"Genetic composition of supercritical branching populations under power law mutation rates"*

Plenary talk 2 (HS01)

- 11:45 - 12:30: **Karl Sigmund** *"Dynamics of signalling games"*

12:30 - 13:30: Lunch

Plenary talk 3 (HS01)

- 13:30 - 14:15: **Tom Britton** *"Mathematical models for epidemics"*

14:15 - 16:15: MMEE discussion session

18:30 - 22:00: Conference Dinner

Thursday, Jul 18

Plenary talk 1 (HS01)

- 09:00 - 09:45: **Corina Tarnita** *"More is different: the origins of major evolutionary transitions"*

09:45 - 10:15: Coffee Break

10:15 - 12:00: **MS: Exploring ecosystem dynamics in a changing world; complexity and stability revisited** (HS08)

- **Kevin J Flynn** *"Modelling trait evolution in plankton communities; challenges and opportunities"*
- **Paolo Lazzari** *"Stability, cycling and noise propagation in a complex biogeochemical model"*
- **Onofrio Mazzarisi** *"Diversity begets stability: sublinear growth and competitive coexistence across ecosystems."*

- **Aditee Mitra** *"Impact of mixotrophic strategies on marine ecosystem structure and functioning"*

10:15 - 12:00: **MS: Multilevel Modeling of Eco-evolutionary Dynamics (HS07)**

- **Gaurav Athreya** *"Mutual dependence and reproductive cohesion in incipient endosymbioses"*

- **Hilje Doekes** *"Multiscale selection: a framework to quantify natural selection at all spatial scales"*

- **Guilhem Doulcier** *"Ecological scaffolding of collective-level properties and the"*

- **Nikhil Sharma** *"On the role of deleterious mutations in long-term evolution"*

Adaptation viewed from niche space (HS01)

10:15 - 10:40: **Jitka Polechová** *"Coevolution of species' range and niche in changing environments"*

10:40 - 11:05: **Titouan Bouinier** *"Male-male competition shaping the evolution of differentiated temporal niches"*

11:05 - 11:30: **Géza Meszéna** *"What is the niche-space? The exact theory"*

Game theory: Games with distinct roles (HS02)

10:15 - 10:40: **Tristan Canterbury** *"Social feedback and the adaptive value of information in a dynamic game of divorce"*

10:40 - 11:05: **David Mark Ramsey** *"A large population mate choice game"*

11:05 - 11:30: **Nikolaos Karagiannis-Axypolitidis** *"Plant-Soil feedbacks as bimatrix evolutionary games"*

Multilevel processes and senescence (HS05)

10:15 - 10:40: **Amanda de Azevedo-Lopes** *"Multilevel selection models for microbiomes"*

10:40 - 11:05: **Lewis Flinham** *"Generating mutualisms through branching in subdivided populations"*

11:05 - 11:30: **Lucy Martin** *"Modelling the spread of senescence"*

11:30 - 11:55: **Murat Tugrul** *"Demographic and Evolutionary Consequences of Damage Dynamics in Single-Cell Ageing"*

Polygenic adaptation (HS09)

10:15 - 10:40: **Philibert Courau** *"The gene's eye-view of quantitative genetics"*

10:40 - 11:05: **Reinhard Bürger** *"Polygenic dynamics underlying the response of quantitative traits to directional selection"*

11:05 - 11:30: **Joachim Krug** *"Submodular fitness landscapes"*

Population genetics: Spatiotemporal variation (HS03)

10:15 - 10:40: **Stephan Peischl** *"What came first: inversions or local adaptation?"*

10:40 - 11:05: **Rebekka Müller-Widmann** *"The allele frequency spectrum in a non-equilibrium world"*

11:05 - 11:30: **Vitor Sudbrack** *"Tandem repeat variation in partially selfing populations"*

11:30 - 11:55: **József Garay** *"Genotype dynamics and Haldane's familial selection"*

12:00 - 13:00: Lunch

13:00 - 14:45: **MS: Expanding theoretical perspectives on senescence (HS09)**

- **Piret Avila** *"The Expensive Germline and the Disposable Soma: exploring the co-evolution of life history and deleterious mutation rate"*
- **Olivier Cotto** *"A null model for the distribution of fitness effects of mutations"*
- **E. Yagmur Erten** *"The effect of germline senescence on life history evolution"*
- **Stefano Giaimo** *"On detecting senescence in stage-structured populations"*

13:00 - 14:45: **MS: Piecewise deterministic Markov processes in ecology and evolution (HS01)**

- **Leonardo Aguirre** *"Piecewise-deterministic Markov processes"*
- **Carlo Albert** *"Scaling Laws of Microbial Growth"*
- **Virgile Brodu** *"An individual-based model for allometric relationships."*
- **Stefanie Winkelmann** *"Systematic reduction of spatio-temporal population dynamics and application to epidemic spreading"*

Coexistence and persistence (HS05)

- 13:00 - 13:25: **Joseph William Baron** *"Spontaneous symmetry breaking between species in large Lotka-Volterra communities"*
- 13:25 - 13:50: **Nadav Shnerb** *"Coexistence in stochastic environments"*
- 13:50 - 14:15: **Hugo Salinas** *"Differences in root architecture increase persistence time in simulated plant communities"*
- 14:15 - 14:40: **Iris Prigent** *"Ecological inheritance promotes the coexistence of environmental helpers and defectors"*

Evolution and evolutionary dynamics– Populations and places (HS02)

- 13:00 - 13:25: **Vlastimil Krivan** *"The Ideal Free Distribution with travel costs: Migration of blufin tuna"*
- 13:25 - 13:50: **Kieran Sharkey** *"Evolutionary bet-hedging in structured populations"*
- 13:50 - 14:15: **Daniel Cooney** *"Evolutionary Dynamics Within and Among Competing Groups"*

Molecular evolution (HS08)

- 13:00 - 13:25: **Augustin Clessin** *"The evolution of GC-biased gene conversion by means of natural selection"*
- 13:25 - 13:50: **Ian Dewan** *"Adaption through copy number variation of eccDNA in yeast"*
- 13:50 - 14:15: **Adekanmi Daniel Omole** *"Stochastic Dynamics of Autonomous and Nonautonomous Transposable Element Interactions in Genomes"*
- 14:15 - 14:40: **Alan Scaramangas** *"Evolution of extrachromosomal DNA in non-growing populations"*

Sexual selection (HS07)

- 13:00 - 13:25: **Xiaoyan Long** *"Disentangling causal evolutionary relationships between sexual selection and parental care"*
- 13:25 - 13:50: **John Lin** *"Computer Simulation and Mathematical Modeling of the Interactions Between Ecological and Sexual Selection to Reveal the Mechanism of Sympatric Speciation"*

13:50 - 14:15: **Mohammadali Dashtbali** *"Biased mutation is insufficient to save runaway sexual selection"*

Spatially fragmented populations (HS03)

13:00 - 13:25: **Monique de Jager** *"The interactive effects of habitat loss, habitat fragmentation, restoration and dispersal capacity on community connectivity"*

13:25 - 13:50: **Anush Devadhasan** *"Negative frequency-dependence is not a mechanism of coexistence in spatially fragmented populations"*

13:50 - 14:15: **Apolline Louvet** *"Dormancy in urban environments"*

14:15 - 14:40: **Suman Chakraborty** *"Chemical defenses in nearly all plants eradicate an endemic by any generalist insects. A result obtained by mathematical modeling"*

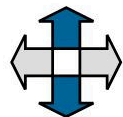
14:45 - 15:15: Coffee Break

Plenary talk 2 (HS01)

15:15 - 16:00: **Claudia Bank** *"Fitness landscapes for the study of eco-evolutionary dynamics"*

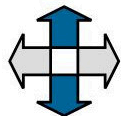
Plenary talk 3 (HS01)

16:00 - 16:45: **Christian Schlötterer** *"The effects of pleiotropy in adaptation"*



OMP1, level EG





OMP1, level 01

