Parabolic and kinetic models in population dynamics

Report of Contributions

https://indico.math.cnrs.fr/e/populationdynamicstoulouse

Contribution ID: **1** Type: **not specified**

Rotating Spirals in segregated reaction-diffusion systems

Monday, September 26, 2022 1:45 PM (50 minutes)

Presenter: TERRACINI, Susanna

Contribution ID: **2** Type: **not specified**

The shape defect function and stability of traveling waves

Monday, September 26, 2022 2:35 PM (50 minutes)

Presenter: HENDERSON, Christopher

Contribution ID: **3** Type: **not specified**

Opening and Welcome

Monday, September 26, 2022 1:30 PM (15 minutes)

Contribution ID: **4** Type: **not specified**

Propagation properties in a multi-species SIR reaction-diffusion system

Monday, September 26, 2022 3:55 PM (50 minutes)

Presenter: DUCASSE, Romain (LJLL)

Contribution ID: **5** Type: **not specified**

How to force biphasic life cycles

Monday, September 26, 2022 4:45 PM (50 minutes)

Presenter: CARRÈRE, Cécile (Université d'Orléans)

Contribution ID: **6** Type: **not specified**

Existence and regularity for cross diffusion equations coming out of population dynamics

Tuesday, September 27, 2022 9:00 AM (50 minutes)

Presenter: DESVILLETTES, Laurent

Contribution ID: **7** Type: **not specified**

Numerical schemes for concentration phenomena in Lotka-Volterra equations

Tuesday, September 27, 2022 9:50 AM (50 minutes)

Presenter: HIVERT, Hélène (ECL - ICJ)

Contribution ID: **8** Type: **not specified**

About the many equilibria of some cross-diffusion systems in population dynamics

Tuesday, September 27, 2022 11:10 AM (50 minutes)

Presenter: BREDEN, Maxime

Contribution ID: **9** Type: **not specified**

Singular limit of stochastic Allen-Cahn eqaution with nonlinear diffusivity

Tuesday, September 27, 2022 1:45 PM (50 minutes)

Presenter: PARK, Hyunjoon

Contribution ID: **10** Type: **not specified**

Kermack-McKendrick models on a two-scale network, connections to the Boltzmann equations and a free boundary problem in time for the spread of Covid-19

Tuesday, September 27, 2022 2:35 PM (50 minutes)

Presenter: STEVENS, Angela

Contribution ID: **11** Type: **not specified**

Controllability in Lotka-Volterra competitive systems with positive coefficients

Tuesday, September 27, 2022 3:55 PM (50 minutes)

Presenter: EFFILI, Elisa

Contribution ID: **12** Type: **not specified**

Spreading speeds and one-dimensional symmetry for reaction-diffusion equations in $\mathbb{R}^N$

Tuesday, September 27, 2022 4:45 PM (50 minutes)

Presenter: HAMEL, François (Aix-Marseille Université)

Contribution ID: **13** Type: **not specified**

TBA

Wednesday, September 28, 2022 11:10 AM (50 minutes)

Presenter: PATOUT, Florian (BioSP, INRAE)

Contribution ID: **14** Type: **not specified**

Some optimal control & game theoretical problems in spatial ecology

Wednesday, September 28, 2022 9:50 AM (50 minutes)

Presenter: MAZARI-FOUQUER, Idriss

Contribution ID: **15** Type: **not specified**

Travelling waves and minimality exchange in smectic C* liquid crystals

Wednesday, September 28, 2022 9:00 AM (50 minutes)

Presenter: CROOKS, Elaine (Swansea University)

Contribution ID: **16** Type: **not specified**

Talk O

Contribution ID: **17** Type: **not specified**

Reaction-diffusion-advection models with multiple movement modes

Thursday, September 29, 2022 9:00 AM (50 minutes)

Presenter: COSNER, Chris

Contribution ID: **18** Type: **not specified**

Incompressible limit and rate of convergence for tumor growth models with a drift

Thursday, September 29, 2022 9:50 AM (50 minutes)

Presenter: DAVID, Noemi (Sorbonne Université)

Contribution ID: **19** Type: **not specified**

Invasion and coexistence among mutualistic community

Thursday, September 29, 2022 11:10 AM (50 minutes)

Presenter: GARNIER, Jimmy

Contribution ID: **20** Type: **not specified**

Convergence to a self-similar profile for a one dimensional one phase Stefan problem

Thursday, September 29, 2022 1:45 PM (50 minutes)

Presenter: HILHORST, Danielle (CNRS et Université Paris-Saclay)

Contribution ID: **21** Type: **not specified**

Pushed-to-pulled front transitions: continuation, speed scalings, and hidden monotonicity

Thursday, September 29, 2022 2:35 PM (50 minutes)

Presenter: HOLZER, Matt

Contribution ID: **22** Type: **not specified**

Reaction-diffusion fronts in funnel-shaped domains

Thursday, September 29, 2022 3:55 PM (50 minutes)

Presenter: ZHANG, Mingmin

Contribution ID: **23** Type: **not specified**

Filling the gap between individual-based evolutionary models and Hamilton-Jacobi equations

Thursday, September 29, 2022 4:45 PM (50 minutes)

Presenter: MIRRAHIMI, Sepideh (CNRS, Institut de mathématiques de Toulouse)

Contribution ID: **24** Type: **not specified**

Computational and analytical approaches for pattern formation in nonlocal hyperbolic systems for biological aggregations

Friday, September 30, 2022 9:00 AM (50 minutes)

Presenter: EFTIMIE, RALUCA (Université Bourgogne-Franche-Comté)

Contribution ID: **25** Type: **not specified**

Logistic equations with non-local and non-linear convection: a model for cells motion

Friday, September 30, 2022 9:50 AM (50 minutes)

Presenter: MAGAL, Pierre (Université de Bordeaux)

Contribution ID: **26** Type: **not specified**

Stability, weak-strong uniqueness and derivation of the SKT system

Friday, September 30, 2022 11:10 AM (50 minutes)

Presenter: MOUSSA, Ayman

Contribution ID: **27** Type: **not specified**

Colloquium: Une promenade mathématique en biologie de l'évolution

Friday, September 30, 2022 2:00 PM (1 hour)

La biologie de l'évolution a été formalisée très tôt à l'aide de raisonnements et modèles mathématiques, déterministes ou aléatoires. Dans cet exposé je présenterai quelques progrès récents sur des questions de génétique quantitative, lorsque la population soumise à évolution est décrite par un trait de caractère (phénotype) continu. Le fil conducteur de l'étude sera l'analyse asymptotique de modèles EDP ou intégro-différentiels très étudiés dans la communauté de biologie évolutive, analyse revisitée avec des outils "modernes". En particulier, je montrerai une analogie fructueuse avec l'analyse semi-classique dans le régime où la diversité dans la population est faible. Cette analogie permet d'aborder un grand nombre de cas d'étude, par exemple lorsque les populations sont réparties dans des habitats hétérogènes (du point de vue de la sélection), lorsque l'environnement change au cours du temps, etc…

Côté mathématique, ce sera l'occasion de présenter des résultats d'EDP, de processus stochastiques, et d'analyse numérique.

Presenter: CALVEZ, Vincent (CNRS et Institut Camille Jordan)