

HORAIRE / *PROGRAM*

**MÉTHODES TOPOLOGIQUES EN ANALYSE NON  
LINÉAIRE : DÉVELOPPEMENTS RÉCENTS**  
CONFÉRENCE À LA MÉMOIRE DU PROFESSEUR ANDRZEJ  
GRANAS

4 au 8 juillet 2022

***TOPOLOGICAL METHODS IN NONLINEAR ANALYSIS:  
RECENT ADVANCES***  
*CONFERENCE IN MEMORY OF PROFESSOR ANDRZEJ GRANAS*  
*July 4– 8, 2022*

## Le lundi 4 juillet 2022 / Monday, July 4, 2022

09:00–10:00 Inscription et café croissants / *Registration and Coffee & Croissants* (Salle / Room 6245)

**10:00–11:00 Jean Mawhin** (Université Catholique de Louvain)  
 «The Brouwer fixed point theorem and periodic solutions (online)»  
*“The Brouwer fixed point theorem and periodic solutions (online)”*

**11:00–11:30 Jacobo Pejsachowicz** (Indam)  
 «The topology of economical crises (online)»  
*“The topology of economical crises (online)”*

**11:30–12:00 Gerald Beer** (California State University Los Angeles)  
 «Making continuous functions Lipschitz (Online)»  
*“Making continuous functions Lipschitz (Online)”*

12:00–14:00 Déjeuner / *Lunch*

**14:00–15:00 Andrzej Szulkin** (Stockholm University)  
 «Normalized solutions to non-variational Schrodinger systems»  
*“Normalized solutions to non-variational Schrodinger systems”*

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

**15:30–16:00 Anna Golebiewska** (Nicolaus Copernicus University)  
 «Global bifurcation from equilibria of autonomous Hamiltonian systems»  
*“Global bifurcation from equilibria of autonomous Hamiltonian systems”*

**16:00–16:30 Tomasz Kaczynski** (Université de Sherbrooke)  
 «Bi-Filtrations for 2-Morse Functions»  
*“Bi-Filtrations for 2-Morse Functions”*

**16:30–17:00 Christopher Goodrich** (UNSW Sydney)  
 «Applications of Topological Fixed Point Theory to Nonlocal Differential Equations with Convolution Coefficients (online)»  
*“Applications of Topological Fixed Point Theory to Nonlocal Differential Equations with Convolution Coefficients”*

**Le mardi 5 juillet 2022 / Tuesday, July 5, 2022**

**09:00–10:00 Krystyna Kuperberg** (Auburn University)  
 «Shape theory applications to continuous dynamical systems (Online)»  
*“Shape theory applications to continuous dynamical systems (Online)”*

**10:00–10:30 Theodore Popelensky** (Moscow State Lomonosov University)  
 «Geometric combinatorial flows on closed surfaces (Online)»  
*“Geometric combinatorial flows on closed surfaces (Online)”*

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

**11:00–11:30 Wenying Feng** (Trent University)  
 «A generalization of the compression cone method for integral operators with changing sign kernel functions (Online)»  
*“A generalization of the compression cone method for integral operators with changing sign kernel functions (Online)”*

**11:30–12:00 Grzegorz Gabor** (Nicolaus Copernicus University )  
 «On two-point BVPs in billiard spaces (Online)»  
*“On two-point BVPs in billiard spaces (Online)”*

12:00–14:00 Déjeuner / *Lunch*

**14:00–15:00 Heinrich Steinlein** (Ludwig Maximilians University of Munich)  
 «Cycles, Eulerian Digraphs, and the Schonemann-Gauss Theorem»  
*“Cycles, Eulerian Digraphs, and the Schonemann-Gauss Theorem”*

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

**15:30–16:00 Fernando Adrián Fernández Tojo** (Universidade de Santiago de Compostela)  
 «Compactification of domains and asymptotic properties of PDEs»  
*“Compactification of domains and asymptotic properties of PDEs”*

**16:00–16:30 Noha El Khattabi** (Université de Rabat)  
 «Mathematical modeling of household waste recovery»  
*“Mathematical modeling of household waste recovery”*

## Le mercredi 6 juillet 2022 / *Wednesday, July 6, 2022*

**09:00–10:00 Patrizia Pucci** (Universita degli study di Perugia)

«A brief excursus on Sobolev inequalities in the Heisenberg group and applications to critical subelliptic problems (Online)»

*“A brief excursus on Sobolev inequalities in the Heisenberg group and applications to critical subelliptic problems (Online)”*

**10:00–10:30 Paola Rubbioni** (University of Perugia)

«Existence and asymptotic stability of solutions of differential equations with delay (Online)»

*“Existence and asymptotic stability of solutions of differential equations with delay (Online)”*

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

**11:00–11:30 Pierluigi Benevieri** (Instituto de Matemática e Estatística, Universidade de São Paulo - USP)

«Periodic solutions for nonlinear dynamic equations via topological degree (Online)»

*“Periodic solutions for nonlinear dynamic equations via topological degree (Online)”*

**11:30–12:00 Katarzyna Szymanska-Debowska** (Lodz University of Technology)

«Variable exponent Lebesgue and Sobolev spaces on time scales and their applications»

*“Variable exponent Lebesgue and Sobolev spaces on time scales and their applications”*

12:00–14:00 Déjeuner / *Lunch*

**14:00–15:00 Wojciech Kryszewski** (Lodz University of Technology)

«Fixed point index for  $c$ -admissible set-valued maps on absolute neighborhood retracts»

*“Fixed point index for  $c$ -admissible set-valued maps on absolute neighborhood retracts”*

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

**15:30–16:00 Wladyslaw Klinikowski** (Nicolaus Copernicus University in Torun)

«Periodic solutions of damped nonlinear wave equations on  $\mathbb{R}^N$ »

*“Periodic solutions of damped nonlinear wave equations on  $\mathbb{R}^N$ ”*

**16:00–16:30 Marian Mrozek** (Jagiellonian University )

«Some recent advances in combinatorial topological dynamics»

*“Some recent advances in combinatorial topological dynamics”*

18:30–21:30 Banquet / <i>Banquet</i> (Salle / <i>Room</i> 6245)
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## Le jeudi 7 juillet 2022 / Thursday, July 7, 2022

**09:00–10:00 Marco Degiovanni** (Università Cattolica del Sacro Cuore)  
 «Lagrangian systems on manifolds under one-sided conditions (Online)»  
*“Lagrangian systems on manifolds under one-sided conditions (Online)”*

**10:00–10:30 Roman Srzednicki** (Jagiellonian University)  
 «On determining the homological Conley index of Poincare maps»  
*“On determining the homological Conley index of Poincare maps”*

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

**11:00–11:30 Pascal Gourdel** (Centre d'économie de la Sorbonne)  
 «A convex selection theorem with a non separable Banach space (Online)»  
*“A convex selection theorem with a non separable Banach space (Online)”*

**11:30–12:00 Marc Lassonde** (Université des Antilles et LIMOS, Clermont-Ferrand, France)  
 «Limiting equilibrium in discontinuous games»  
*“Limiting equilibrium in discontinuous games”*

12:00–14:00 Déjeuner / *Lunch*

**14:00–15:00 Lia Bronsard** (McMaster University)  
 «Ring defects in Liquid Crystals»  
*“Ring defects in Liquid Crystals”*

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

**15:30–16:00 Dimitri Mugnai** (Tuscia University)  
 «Fractional Laplacians and nonlocal boundary conditions (Online)»  
*“Fractional Laplacians and nonlocal boundary conditions (Online)”*

**16:00–16:30 Lamiae Maia** (Université Mohammed V de Rabat)  
 «Stieltjes differential equations : existence and multiplicity results, applied to a species persistence model (Online)»  
*“Stieltjes differential equations: existence and multiplicity results, applied to a species persistence model (Online)”*

**16:30–17:00 Guillaume Brouillette** (Université de Sherbrooke)

«Extending Morse-Forman Theory Through Combinatorial Dynamics»

*“Extending Morse-Forman Theory Through Combinatorial Dynamics”*

Le vendredi 8 juillet 2022 / *Friday, July 8, 2022*

**09:00–10:00 Vladimir Nazaikinskii** (Ishlinsky Institute for Problems in Mechanics RAS )  
 «Symplectic reduction for differential equations degenerating on the boundary (Online)»  
*“Symplectic reduction for differential equations degenerating on the boundary (Online)”*

**10:00–10:30 Piotr Stefaniak** (Nicolaus Copernicus University in Torun)  
 «Global bifurcation index of a critical orbit and its applications to symmetric elliptic system»  
*“Global bifurcation index of a critical orbit and its applications to symmetric elliptic system”*

10:30–11:00	Pause-café / <i>Coffee break</i> (Salle / Room 6245)
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**11:00–11:30 Aleksander Cwizewski** (Nicolaus Copernicus University)  
 «Standing wave solutions of Schrodinger equations with Kato-Rellich type potentials»  
*“Standing wave solutions of Schrodinger equations with Kato-Rellich type potentials”*

**11:30–12:00 Charles Horvath** (Université de Perpignan via Domitia)  
 «Elementary and Useless Remarks on Mini-Max Type Theorems and Their Proofs»  
*“Elementary and Useless Remarks on Mini-Max Type Theorems and Their Proofs”*