

HORAIRE / *PROGRAM*

ÉCOLE D'ÉTÉ SMS 2015
THÉORIE SPECTRALE GÉOMÉTRIQUE ET COMPUTATIONNELLE
15 au 26 juin 2015

SMS 2015 SUMMER SCHOOL
GEOMETRIC AND COMPUTATIONAL SPECTRAL THEORY
June 15–26, 2015

Conférences : salle 1140 (Pavillon André-Aisenstadt)

Pauses-café : salle 1221, Pavillon André-Aisenstadt

Lectures: Room 1140 (Pavillon André-Aisenstadt)

Coffee Breaks: Room 1221, Pavillon André-Aisenstadt

Le lundi 15 juin 2015 / *Monday, June 15, 2015*

08:00–09:30 Inscripton et café croissants (Salle 1221)
Registration and Coffee & Croissants (Room 1221)

09:30–10:30 Bruno Colbois (Université de Neuchâtel)
“The spectrum of the Laplacian: a geometric approach I”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Bruno Colbois (Université de Neuchâtel)
“The spectrum Of the Laplacian: a geometric approach II”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Guido Kanschat (Universität Heidelberg)
“Finite element approximation of eigenvalue problems I”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Guido Kanschat (Universität Heidelberg)
“Finite element approximation of eigenvalue problems II”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15– Exercices / *Discussions*

Le mardi 16 juin 2015 / *Tuesday, June 16, 2015*

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Bruno Colbois (Université de Neuchâtel)
“The spectrum Of the Laplacian: a geometric approach III”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Bruno Colbois (Université de Neuchâtel)
“The spectrum Of the Laplacian: a geometric approach IV”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Guido Kanschat (Universität Heidelberg)
“Finite element approximation of eigenvalue problems III”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Guido Kanschat (Universität Heidelberg)
“Finite element approximation of eigenvalue problems IV”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15–16:40 Eldar Akhmetgaliyev (California Institute of Technology)
“Integral equation methods for spectral problems”

16:45–17:10 David A. Sher (University of Michigan)

17:30– Cocktail de bienvenue / *Welcoming reception* (Salle / Room 6245)

Le mercredi 17 juin 2015 / *Wednesday, June 17, 2015*

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Dorin Bucur (Université de Savoie)
“Shape optimization and spectral inequalities I”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Richard Schoen (Stanford University)
“The spectral geometry of the Dirichlet-Neumann operator I”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Chen Greif (University of British Columbia)
“Numerical Solution of Linear Eigenvalue Problems I”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Chen Greif (University of British Columbia)
“Numerical Solution of Linear Eigenvalue Problems II”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15– Exercices / *Discussions*

Le jeudi 18 juin 2015 / Thursday, June 18, 2015

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Dorin Bucur (Université de Savoie)
“Shape optimization and spectral inequalities II”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Richard Schoen (Stanford University)
“The spectral geometry of the Dirichlet-Neumann operator II”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Chen Greif (University of British Columbia)
“Numerical Solution of Linear Eigenvalue Problems III”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Chen Greif (University of British Columbia)
“Numerical Solution of Linear Eigenvalue Problems IV”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15– Exercices / *Discussions*

Le vendredi 19 juin 2015 / *Friday, June 19, 2015*

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Dorin Bucur (Université de Savoie)
“Shape optimization and spectral inequalities III”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Richard Schoen (Stanford University)
“The spectral geometry of the Dirichlet-Neumann operator III”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Gregory Berkolaiko (Texas A&M University)
“Interlacing eigenvalue inequalities and counting zeros of graph eigenfunctions I”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Gregory Berkolaiko (Texas A&M University)
“Interlacing eigenvalue inequalities and counting zeros of graph eigenfunctions II”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15– Exercices / *Discussions*

Le lundi 22 juin 2015 / *Monday, June 22, 2015*

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Daniel Grieser (Carl Von Ossietzky Universität Oldenburg)
“Asymptotics of eigenvalues on thin things I”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Daniel Grieser (Carl Von Ossietzky Universität Oldenburg)
“Asymptotics of eigenvalues on thin things II”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Gregory Berkolaiko (Texas A&M University)
“Interlacing eigenvalue inequalities and counting zeros of graph eigenfunctions III”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Gregory Berkolaiko (Texas A&M University)
“Interlacing eigenvalue inequalities and counting zeros of graph eigenfunctions IV”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15–17:15 Colin Guillarmou (École Normale Supérieure)
“A scattering theory approach for X-ray tomography I”

Le mardi 23 juin 2015 / Tuesday, June 23, 2015

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Daniel Grieser (Carl Von Ossietzky Universität Oldenburg)
“Asymptotics of eigenvalues on thin things III”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Daniel Grieser (Carl Von Ossietzky Universität Oldenburg)
“Asymptotics of eigenvalues on thin things IV”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Colin Guillarmou (École Normale Supérieure)
“A scattering theory approach for X-ray tomography II”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Colin Guillarmou (École Normale Supérieure)
“A scattering theory approach for X-ray tomography III”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15– Exercices / *Discussions*

Le mercredi 24 juin 2015 / *Wednesday, June 24, 2015*

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Mikhail Sodin (Tel-Aviv University)
“Random Nodal Portraits I”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Richard Melrose (MIT)
“Laplacians degenerating at a point and gluing I”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Alexander Strohmaier (Loughborough University)
“Computation of Eigenvalues, Spectral Zeta Functions and Zeta-Determinants on Hyperbolic Surfaces I”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Alexander Strohmaier (Loughborough University)
“Computation of Eigenvalues, Spectral Zeta Functions and Zeta-Determinants on Hyperbolic Surfaces II”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15–16:40 Corentin Lena (Universita degli studi di Torino)
“On the number of nodal domains for flat tori”

16:45– Exercices / *Discussions*

Le jeudi 25 juin 2015 / *Thursday, June 25, 2015*

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Mikhail Sodin (Tel-Aviv University)
“Random Nodal Portraits II”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Richard Melrose (MIT)
“Laplacians degenerating at a point and gluing II”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Alexander Strohmaier (Loughborough University)
“Computation of Eigenvalues, Spectral Zeta Functions and Zeta-Determinants on Hyperbolic Surfaces III”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Bernard Helffer (Université Paris-Sud)
“On nodal partitions and minimal spectral partitions (an introduction) I”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15–16:40 Asma Hassannezhad (Max-Planck Institute for Mathematics)
“Counting function and multiplicity of the Laplacian eigenvalues”

16:45–17:10 Semyon Dyatlov (University of California, Berkeley)
“Spectral gaps via additive combinatorics”

Le vendredi 26 juin 2015 / *Friday, June 26, 2015*

09:00–09:30 Café croissants / *Coffee & Croissants* (Salle / Room 1221)

09:30–10:30 Mikhail Sodin (Tel-Aviv University)
“Random Nodal Portraits III”

10:30–10:45 Pause-café / *Coffee break* (Salle / Room 1221)

10:45–11:45 Richard Melrose (MIT)
“Laplacians degenerating at a point and gluing III”

11:45–13:30 Pause-déjeuner / *Lunch break*

13:30–14:30 Bernard Helffer (Université Paris-Sud)
“On nodal partitions and minimal spectral partitions (an introduction) II”

14:30–14:45 Pause-café / *Coffee break* (Salle / Room 1221)

14:45–15:45 Bernard Helffer (Université Paris-Sud)
“On nodal partitions and minimal spectral partitions (an introduction) III”

15:45–16:15 Pause-café / *Coffee break* (Salle / Room 1221)

16:15–16:40 Romain Petrides (Institut Camille Jordan)
“Existence and regularity of maximal metrics for the Laplace eigenvalues on surfaces”

16:45–17:10 Yaiza Canzani Garcia (Harvard University)
“Zero sets of monochromatic random waves”