

**Fourth Saint-Petersburg Conference in Spectral Theory**  
dedicated to the memory of M.Sh.Birman  
**Euler Institute, Saint-Petersburg, Russia**

**July 2-6, 2012**

**PROGRAMME**

**MONDAY 2 July:**

9:30–10:00: REGISTRATION

10:00–11:00: Nikolai Nikolski (Bordeaux 1)  
*The spectrum of Fourier-Muckenhoupt multipliers*

COFFEE BREAK

11:30–12:30: Anatoly Vershik (Steklov Institute, St.Petersburg)  
*Quasismilarity and invertibility of the dynamical systems*

LUNCH

14:30–15:30: Vladimir Peller (Michigan)  
*Functions of perturbed collections of commuting self-adjoint operators*

15:35–16:35: Igor Krasovsky (Imperial College, London)  
*Asymptotic properties of Toeplitz matrices*

COFFEE BREAK

17:00–18:00: Sergei Levin (St.Petersburg)  
*Three particle quantum scattering: asymptotic behaviour of eigenfunctions*

18:30: BOAT TRIP

**TUESDAY 3 July:**

10:00–11:00: Igor Rodnianski (MIT)  
 *$L^2$  curvature conjecture in General Relativity*

COFFEE BREAK

11:30–12:30: Mihalis Dafermos (Cambridge)  
*Construction of dynamical vacuum black holes parametrized by scattering data*

LUNCH

14:30–15:30: Hideo Tamura (Okayama)  
*Aharonov-Bohm effect in resonances of magnetic Schrödinger operators in two dimensions*

15:35–16:35: Stephane Nonnenmacher (CEA Saclay)  
*Normally hyperbolic trapping: resonances and time evolution*

COFFEE BREAK

17:05–17:30: Leander Geisinger (Princeton)  
*Semiclassical analysis of the Laplace operator with variable boundary conditions*

17:35–18:00: Nikita Senik (St.Petersburg)  
*Homogenization for periodic elliptic second order differential operators in a strip*

18:05–18:30: Andrei Smirnov (St.Petersburg)  
*Adiabatic dynamics generated by the Schrödinger operator*

**WEDNESDAY 4 July:**

10:00–11:00: Tatiana Suslina (St.Petersburg)

*Homogenization of the Dirichlet problem for elliptic systems with periodic coefficients*

COFFEE BREAK

11:30–12:30: Rainer Hempel (TU Braunschweig)

*Dislocation problems in two dimensions*

LUNCH

14:30–15:30: Alexander Kiselev (Univ. of Wisconsin, Madison)

*Biomixing by chemotaxis and enhancement of biological reactions*

15:35–16:35: Stanislav Molchanov (UNC Charlotte)

*On the spectral theory of Schrödinger operator on Dyson hierarchical lattice*

COFFEE BREAK

17:05–17:30: Semyon Dyatlov (Berkeley)

*Semiclassical limits of plane waves*

17:35–18:00: Amru Hussein (Mainz)

*Indefinite operators on bounded domains: Spectral asymptotics*

18:05–18:30: Alexander Poretckii (St.Petersburg)

*The Maxwell system in waveguides with several cylindrical ends*

**THURSDAY 5 July:**

10:00–11:00: Svetlana Jitomirskaya (UC Irvine)

*Duality and absolutely continuous spectrum for discrete multidimensional quasiperiodic operators at small couplings*

COFFEE BREAK

11:30–12:30: Michael Aizenman (Princeton)

*Resonant delocalization for random Schrödinger operators on tree graphs*

LUNCH

14:30–15:30: Abel Klein (UC Irvine)

*Bounds on the density of states for Schrödinger operators*

15:35–16:35: Frederic Klopp (Paris, Jussieu)

*Level statistics at the spectral edges*

COFFEE BREAK

17:00–18:00: Robert Sims (Tucson, Arizona)

*Dynamical Localization in Disordered Quantum Spin Systems*

18:30–22:00: CONFERENCE DINNER

**FRIDAY 6 July:**

10:00–11:00: Nikolai Filonov (St.Petersburg)  
*Maxwell operator in the twentieth century*

COFFEE BREAK

11:30–12:30: Shu Nakamura (Tokyo)  
*Microlocal properties of scattering matrices for Schrödinger equations on scattering manifolds*

LUNCH

14:30–15:30: Alexander Volberg (Michigan)  
*Free boundary problems with arbitrary sign and David–Semmes problem from Geometric Measure Theory*

15:35–16:35: Yulia Karpeshina (UAB)  
*2D-quasiperiodic problem via multiscale analysis in the momentum space*

COFFEE BREAK

17:00–18:00: Mikhail Lyalinov (St.Petersburg)  
*Scattering of waves by a circular penetrable cone*