15th Saint-Petersburg Conference *in* Spectral Theory and Mathematical Physics, dedicated to M. S. Birman

Euler Institute, St. Petersburg, Russia

June 24–28, 2024

C O N F E R E N C E   P R O G R A M

Monday, June 24

$09^{30} - 09^{55}$ **Registration**

$09^{55} - 10^{00}$ **Opening**

$10^{00} - 10^{45}$ **Andrei Shkalikov** (MSU)
On the unconditional basis property for some general operators and operators generated by systems of ODE

$10^{50} - 11^{35}$ **Alexander Skubachevskii** (RUDN University)
On a spectrum of the fourth-order differential operator with integral conditions

Coffee Break

$12^{00} - 12^{45}$ **Alexander Nazarov** (PDMI RAS & SPSU)
Minimizers of the fractional Hardy–Sobolev inequality, and their nondegeneracy

$12^{50} - 13^{15}$ **Ekaterina Zlobina** (SPSU)
Diffraction of large-number whispering gallery mode by jump of curvature

Lunch

$15^{00} - 15^{45}$ **Nikolai Filonov** (PDMI RAS)
On the Pólya conjecture for the Neumann problem in planar convex domains

$15^{50} - 16^{35}$ **Igor Sheipak** (MSU)
On sharp estimates of functions derivatives in the Sobolev spaces with uniform norm

Coffee Break

$17^{00} - 17^{45}$ **Alexander Sobolev**[*] (UCL)
Hankel operators with band spectra

---

[*] Online

$17^{50} - 18^{15}$ **Grigorii Agafonkin*** (MSU)
Qualitative spectral properties of the involutive Friedrichs model

$18^{20} - 18^{35}$ **Yulya Solovyeva**
Cultural program presentation

18^{40} **Welcome Party**

---

* Online

Tuesday, June 25

$10^{00} - 10^{45}$ **Denis Borisov** (IM UFRC RAS)
Operator estimates for domains with irregularly oscillating boundary: Dirichlet and Neumann condition

$10^{50} - 11^{35}$ **Andrey Piatnitski** (UiT The Arctic University of Norway & IITP RAS)
Homogenization of spectral problem for periodic high contrast convolution-type operators

Coffee Break

$12^{00} - 12^{45}$ **Gregory Chechkin** (MSU)
On boundary layers in media with O. A. Ladyzhenskaya rheology

$12^{50} - 13^{15}$ **Mark Dorodnyi** (SPSU)
High-energy homogenization of a multidimensional nonstationary Schrödinger equation

Lunch

$15^{00} - 15^{45}$ **Elena Zhizhina** (UiT The Arctic University of Norway & IITP RAS)
Homogenization of nonlocal high-contrast elliptic type operators and Markov jump processes in high-contrast periodic media

$15^{50} - 16^{35}$ **Alexander Bufetov** (Steklov)
Speed of mixing for the sine-process

Coffee Break

$17^{00} - 17^{45}$ **Andrey Karol** (SPSU)
Estimates and asymptotics for the spectrum of compact pseudodifferential operators of variable order

17^{50} **Walking tour**[†]

[†] A walking tour along the Karpovka river

Wednesday, June 26

$10^{00} - 10^{45}$ **Karakhan Mirzoev** (MSU)
Recurrence relations with gaps of length $2n$ for Bernoulli and Euler polynomials

$10^{50} - 11^{35}$ **Sergey Tumanov** (MSU)
On Molchanov's criterion for the compactness of the resolvent for the non-selfadjoint Sturm–Liouville operator

Coffee Break

$12^{00} - 12^{45}$ **Sergey Simonov** (PDMI RAS)
Spectral multiplicity of Schrödinger operators on a star-graph with non-Kirchhoff interface conditions

$12^{50} - 13^{15}$ **Alexey Kosarev** (MSU)
Asymptotics of solutions for $n \times n$ systems of ordinary differential equations with summable coefficients

Lunch

$15^{00} - 15^{45}$ **Sergey Dobrokhotov** (IPMech RAS)
Spectral asymptotics corresponding to degenerate billiards with semi-rigid walls and nonlinear long coastal waves

$15^{50} - 16^{35}$ **Vladimir Nazaikinskii** (IPMech RAS)
On asymptotic solutions of the nonlinear shallow water equations in a basin with a sloping beach

Coffee Break

$17^{00} - 17^{45}$ **Mikhail Lyalinov** (SPSU)
Acoustic eigenmodes localised near a "shoreline" of a vessel covered by a thin elastic membrane

$17^{50} - 18^{30}$ **Anna Allilueva** (IPMech RAS)
Mode's transformation and short-wave asymptotics in linearized equations of shallow water theory with abruptly varying coefficients

Thursday, June 27

10^{00} – 10^{45} **Iskander Taimanov** (Sobolev Institute of Mathematics, Novosibirsk)
On PT-symmetric Schrödinger operators

10^{50} – 11^{35} **Victor Novokshenov** (IM UFRC RAS)
Singularities of the Painlevé monodromy manifolds

Lunch

13^{30} **Bus trip and picnic**[‡]

[‡] A bus trip to Peterhof and a picnic

Friday, June 28

$10^{00} - 10^{45}$ **Alexander Fedotov** (SPSU)
On a quasi-periodic difference Schrödinger operator with a meromorphic potential

$10^{50} - 11^{35}$ **Vladimir Bobkov** (IM UFRC RAS)
Reverse Faber–Krahn and Szegö–Weinberger type inequalities for domains with nontrivial topology

Coffee Break

$12^{00} - 12^{45}$ **Natalia Bondarenko** (Samara University)
Inverse spectral problems for a fourth-order differential equation

$12^{50} - 13^{15}$ **Dmitrii Mokeev** (HSE)
Inverse resonance problems for energy-dependent potentials on the half-line

Lunch

$15^{00} - 15^{25}$ **Radim Suleymanov** (UUST)
On operator estimates for elliptic equations in two-dimensional domains with frequently alternating boundary conditions on rapidly oscillating boundary

$15^{30} - 15^{55}$ **Arseniy Mishulovich** (SPSU)
Homogenization of a multidimensional periodic elliptic operator at the edge of a spectral gap: Operator estimates in the energy norm

$16^{00} - 16^{25}$ **Nikolay Andronov** (SPSU)
On a Schrödinger operator with a potential having infinitely many "bumps"

16^{30} **Coffee & Closing**