Conference in Spectral Theory and Mathematical Physics

Sirius Mathematics Center, Sochi, Russia

February 3–7, 2020

CONFERENCE PROGRAMME

MONDAY 3 February:

9:00–9:30: REGISTRATION

9:30–10:20: Leonid Pastur (B. I. Verkin Institute for Low Temperature Physics and Engineering, Kharkov, Ukraine). *Analogs of Szegö's theorem for ergodic operators.*

10:30–11:20: Frédéric Klopp (Sorbonne Université, France). *Exponential decay for the 2 particle density matrix of disordered many-body fermions at zero and positive temperature.*

COFFEE BREAK

11:50–12:20: Vadim Ognov (IMJ-PRG, Sorbonne Université, France). *Luttinger-Sy model and ground state energy per particle in the thermodynamic limit.*

12:20–12:50: Albrecht Seelmann (Technische Universität Dortmund, Germany). *Anderson localization beyond regular Floquet eigenvalues.*

LUNCH

14:30–15:00: Sylvain Zalczer (Université de Toulon, La Garde, France). *Anderson localization for random Dirac operators.*

15:00–15:30: Matteo Capoferri (University College London, United Kingdom). *Global hyperbolic propagators in curved space.*

COFFEE BREAK

16:00–16:30: Alexander Poretskii (St. Petersburg State University, Russia). *Mathematical scattering theory in quantum waveguides.*

16:30–17:00: Nikita Rastegaev (St. Petersburg State University, Russia). *On spectral asymptotics for the Sturm–Liouville problem with singular self-similar weight measure.*

17:30 WELCOME PARTY

TUESDAY 4 February:

9:30–10:20: Dimitri Yafaev (St. Petersburg State University, Russia). *Asymptotic behavior of orthogonal polynomials without the Carleman condition*

10:30–11:20: Grigori Rozenblum (St. Petersburg State University, Russia). *Spectral properties of the Neumann–Poincaré operator for the elasticity system and related questions about zero order pseudodifferential operators.*

COFFEE BREAK

11:50–12:40: Yoshihisu Miyanishi (Center for Mathematical Modeling and Data Science, Osaka University, Japan). *Applications of Neumann–Poincaré operators: non-cloaking by anomalous localized resonance for the electro-static system in three-dimensional smooth convex domains.*

LUNCH

14:30–15:20: Svetlana Pastukhova (Russian Technological University, Russia). *Modified method of the first approximation and operator-type estimates in homogenization.*

COFFEE BREAK

15:50–16:20: Vladimir Sloushch (St. Petersburg State University, Russia). *Estimates and asymptotic behavior of the discrete spectrum of a discrete periodic Schrodinger operator perturbed by a decreasing potential.*

16:20–16:50: Mark Dorodnyi (St. Petersburg State University, Russia). *Homogenization of hyperbolic equations with periodic coefficients.*

WEDNESDAY 5 February:

9:00–9:50: Michael Levitin (University of Reading, United Kingdom). *Asymptotics of Steklov eigenvalues in curvilinear polygons.*

10:00–10:50: Alexander Nazarov (St. Petersburg Dept. of Steklov Mathematical Institute and St. Petersburg State University, Russia). *Spectral asymptotics for some problems generated by the FBM-like processes.*

COFFEE BREAK

11:20–12:10: Aleksei Ilyin (Keldysh Institute of Applied Mathematics RAS, Russia). *Lieb–Thirring and Ladyzhenskaya inequalities on the sphere and on the torus.*

LUNCH

13:20   TRIP TO KRASNAYA POLYANA

THURSDAY 6 February:

9:30–10:20: Alexander Aptekarev (Keldysh Institute of Applied Mathematics RAS, Russia). *On spectrum of a selfadjoint difference operator on a graph-tree.*

10:30–11:20: Andrei Shkalikov (Lomonosov Moscow State University, Russia). *On perturbations of self-adjoint and normal operators. Analytical aspects.*

<div align="center">COFFEE BREAK</div>

11:50–12:40: Igor Sheipak (Lomonosov Moscow State University, Russia). *Constants in the Sobolev embedding theorems. Applications to spectral problems*

<div align="center">LUNCH</div>

14:30–15:00: Tatiana Garmanova (Lomonosov Moscow State University, Russia). *Properties of estimation functions in inequalities of Friedrichs–Markov–Kolmogorov type.*

15:00–15:30: Vladimir Sivkin (Lomonosov Moscow State University, Russia). *Preservation of the basis property under locally subordinated perturbations of self-adjoint operators.*

<div align="center">COFFEE BREAK</div>

16:00–16:30: Vladimir Lysov (Keldysh Institute of Applied Mathematics RAS, Russia). *Direct and inverse problems for vector logarithmic potentials with external fields.*

16:30–17:00: Amru Hussein (Technische Universität Kaiserslautern, Germany). *Non-self-adjoint graphs: spectra, similarity, semigroups.*

FRIDAY 7 February:

9:30–10:20: Vadim Kostrykin (Johannes Gutenberg-Universität Mainz, Germany). *On the invertibility of block matrix operators.*

10:30–11:20: Yuri Kordyukov (Institute of Mathematics with Computing Centre, Ufa Federal Research Centre, RAS, Russia). *Semiclassical eigenvalue asymptotics for the magnetic Laplacian with full-rank magnetic field.*

<div align="center">COFFEE BREAK</div>

11:50–12:40: Alexandre Fedotov (St. Petersburg State University, Russia). *The spectrum and density of states of the almost Mathieu operator in semiclassical approximation.*

<div align="center">LUNCH</div>

14:30–15:00: Ekaterina Shchetka (St. Petersburg State University, Russia). *On semiclassical methods for difference equations.*

15:00–15:30: Ekaterina Zlobina (St. Petersburg State University, Russia). *High-frequency diffraction by a non-smooth contour.*

<div align="center">COFFEE BREAK</div>