

Workshop "New Trends in Mathematical Physics"

November 9 – December 11, 2020, online
Steklov Mathematical Institute, Moscow

1st week

Monday, 9 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Noboru Watanabe (Tokyo University of Science) Note on complexity for the quantum compound systems
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Tuesday, 10 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 10:00–11:00 (GMT3) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Antonio Vidiella-Barranco (University of Campinas) How faithfully the evolution of composite open quantum systems can be modeled?
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Wednesday, 11 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Sergey Kozyrev (Steklov Mathematical Institute of RAS) Genome as a functional program
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Thursday, 12 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Vsevolod Sakbaev (Moscow Institute of Physics and Technology) Dynamics of quantum states generated by Schrodinger equation admitting blow up phenomenon
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Friday, 13 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Dariusz Chruscinski (Nicolaus Copernicus University) Universal Spectra of Random Lindblad Operators
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2nd week

Monday, 16 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Luigi Accardi (Universita' di Roma Torvergata) The n-dimensional quadratic Heisenberg algebra as a “non-commutative” $sl(2, C)$
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 10:00–11:00 (GMT6) 06:00–07:00 (PDT)	Vadim Malyshev (Moscow State University) Structure of Classical Mathematical Physics as new Project and new Journal
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Tuesday, 17 November

22:00–22:20 (JST) 16:00–16:20 (MSK) 14:00–14:20 (CET) 08:00–08:20 (NYT) 05:00–05:20 (PDT)	Alexander Teretenkov (Steklov Mathematical Institute of RAS) Reduced quantum dynamics in all orders of perturbation theory with Bogolubov-van Hove scaling
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22:25–22:45 (JST) 16:25–16:45 (MSK) 14:25–14:45 (CET) 08:25–08:45 (NYT) 05:25–05:45 (PDT)	Daniel Afanasev (School №1561, Moscow) Global properties of spherically symmetric solutions in General Relativity with an Electromagnetic field and a Cosmological Constant
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22:50–23:10 (JST) 16:50–17:10 (MSK) 14:50–15:10 (CET) 08:50–09:10 (NYT) 05:50–06:10 (PDT)	Oleg Inozemcev (Steklov Mathematical Institute of RAS) On formulation of the Eigenstate Thermalization Hypothesis
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Wednesday, 18 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Andrei Khrennikov (Linnaeus University) Quantum-like models: decision making and social laser
23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	Marco Cattaneo (IFISC CSIC-UIB, Spain and University of Turku, Finland) Symmetry and block structure of the Liouvillian superoperator in partial secular approximation
00:00–00:20 (JST) 18:00–18:20 (MSK) 16:00–16:20 (CET) 10:00–10:20 (NYT) 07:00–07:20 (PDT)	Andrey Mikhailov (Russian Research Institute of Fisheries and Oceanography) Relativistic Brownian motion - 1
00:25–00:45 (JST) 18:25–18:45 (MSK) 16:25–16:45 (CET) 10:25–10:45 (NYT) 07:25–07:45 (PDT)	Edward Kurianovich (NOC MIAN) Relativistic Brownian motion - 2

Thursday, 19 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	<p>Anton Trushechkin (Steklov Mathematical Institute of RAS) Mathematical methods of quantum cryptography</p>
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	<p>Felipe Barra (University of Chile) Equilibrium quantum batteries and their nonequilibrium operations</p>
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Friday, 20 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	<p>Grigori Amosov (Steklov Mathematical Institute of RAS) On classical capacity of quantum Weyl channels</p>
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	<p>Vladimir Nazaikinskii (Ishlinsky Institute for Problems in Mechanics RAS) Partial spectral flow and the Aharonov–Bohm effect in graphene</p>
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00:00–01:00 (JST) 18:00–19:00 (MSK) 16:00–17:00 (CET) 10:00–11:00 (NYT) 07:00–08:00 (PDT)	<p>Mikhail Vasiliev (Lebedev institute of physics RAS) Spin-Locality and Star-Product Functions in Higher-Spin Theory</p>
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**International Conference on Mathematical Physics
in Memory of Academician V.S. Vladimirov**

November 23–27, 2020, online

Steklov Mathematical Institute, Moscow

3rd week

Monday, 23 November

22:00–22:45 (JST) 16:00–16:45 (MSK) 14:00–14:45 (CET) 08:00–08:45 (NYT) 05:00–05:45 (PDT)	Valery Kozlov (Steklov Mathematical Institute of RAS) Linear system with quadratic invariant as the Schrodinger equation
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22:50–23:35 (JST) 16:50–17:35 (MSK) 14:50–15:35 (CET) 08:50–09:35 (NYT) 05:50–06:35 (PDT)	Vsevolod Sakbaev (Moscow Institute of Physics and Technology) On the operator approach to the weak convergence of measures and limit theorems
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23:45–00:30 (JST) 17:45–18:30 (MSK) 15:45–16:30 (CET) 09:45–10:30 (NYT) 06:45–07:30 (PDT)	<p style="text-align: center;">Anatolii Gushchin (Moscow State University of Science and Technology)</p> <p style="text-align: center;">Extensions of the space of continuous functions and its application to the Dirichlet problem for elliptic equations</p>
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00:30–01:15 (JST) 18:30–19:15 (MSK) 16:30–17:15 (CET) 10:30–11:15 (NYT) 07:30–08:15 (PDT)	<p style="text-align: center;">Oleg Smolyanov (Moscow State University)</p> <p style="text-align: center;">Quantum anomalies and differential properties of generalized Lebesgue-Feynman measures</p>
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01:15–02:00 (JST) 19:15–20:00 (MSK) 17:15–18:00 (CET) 11:15–12:00 (NYT) 08:15–09:00 (PDT)	<p style="text-align: center;">Luigi Accardi (Universita' di Roma Torvergata)</p> <p style="text-align: center;">TBA</p>
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Tuesday, 24 November

22:00–22:45 (JST) 16:00–16:45 (MSK) 14:00–14:45 (CET) 08:00–08:45 (NYT) 05:00–05:45 (PDT)	Dmitry Treschev (Steklov Mathematical Institute of RAS) Quantum heavy particle in a periodic potential
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22:50–23:35 (JST) 16:50–17:35 (MSK) 14:50–15:35 (CET) 08:50–09:35 (NYT) 05:50–06:35 (PDT)	Mikhail Katanaev (Steklov Mathematical Institute of RAS) Point disclinations in the geometric theory of defects
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23:45–00:30 (JST) 17:45–18:30 (MSK) 15:45–16:30 (CET) 09:45–10:30 (NYT) 06:45–07:30 (PDT)	Victor Zharinov (Steklov Mathematical Institute of RAS) Binary relations and fuzzy logic
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00:30–01:00 (JST) 18:30–19:00 (MSK) 16:30–17:00 (CET) 10:30–11:00 (NYT) 07:30–08:00 (PDT)	Lyudmila Efremova (Moscow Institute of Physics and Technology) On the partial integrability property of maps obtained by small smooth perturbations of skew products
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Wednesday, 25 November

22:00–22:45 (JST) 16:00–16:45 (MSK) 14:00–14:45 (CET) 08:00–08:45 (NYT) 05:00–05:45 (PDT)	Alexander Holevo (Steklov Mathematical Institute of RAS) Multimode quantum Gaussian observables: structure and capacities
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22:50–23:35 (JST) 16:50–17:35 (MSK) 14:50–15:35 (CET) 08:50–09:35 (NYT) 05:50–06:35 (PDT)	Armen Sergeev (Steklov Mathematical Institute of RAS) Topological insulators invariant under time reversal
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23:45–00:30 (JST) 17:45–18:30 (MSK) 15:45–16:30 (CET) 09:45–10:30 (NYT) 06:45–07:30 (PDT)	Alexander Aptekarev (Keldysh Institute of Applied Mathematics) Multiple Orthogonal Polynomials with respect to Hermite weights: applications and asymptotics
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00:30–01:15 (JST) 18:30–19:15 (MSK) 16:30–17:15 (CET) 10:30–11:15 (NYT) 07:30–08:15 (PDT)	Sergey Dobrokhotov (Institute for Problems in Mechanics RAS) Asymptotics of Hermitian type orthogonal polynomials: real semiclassical approximation for the asymptotics with complex-valued phases
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01:15–01:45 (JST) 19:15–19:45 (MSK) 17:15–17:45 (CET) 11:15–11:45 (NYT) 08:15–08:45 (PDT)	<p style="text-align: center;">Khachatur Khachatryan (Yerevan State University, Institute of Mathematics NAS) On alternating solutions of a class of multidimensional integral equations with convex nonlinearity</p>
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01:45–02:15 (JST) 19:45–20:15 (MSK) 17:45–18:15 (CET) 11:45–12:15 (NYT) 08:45–09:15 (PDT)	<p style="text-align: center;">Dmitriy Shirokov (National Research University Higher School of Economics, IITP RAS) On some equations modeling the Yang-Mills equations</p>
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Thursday, 26 November

22:00–22:45 (JST) 16:00–16:45 (MSK) 14:00–14:45 (CET) 08:00–08:45 (NYT) 05:00–05:45 (PDT)	Andrei Shafarevich (Moscow State University) TBA
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22:50–23:35 (JST) 16:50–17:35 (MSK) 14:50–15:35 (CET) 08:50–09:35 (NYT) 05:50–06:35 (PDT)	Pavel Exner (Doppler Institute for Mathematical Physics and Applied Mathematics in Prague) On the discrete spectrum of soft quantum waveguides
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23:45–00:15 (JST) 17:45–18:15 (MSK) 15:45–16:15 (CET) 09:45–10:15 (NYT) 06:45–07:15 (PDT)	Evgeny Zelenov (Steklov Mathematical Institute of RAS) TBA
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00:15–00:45 (JST) 18:15–18:45 (MSK) 16:15–16:45 (CET) 10:15–10:45 (NYT) 07:15–07:45 (PDT)	Alexander Zubarev (Samara University) TBA
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00:45–01:15 (JST) 18:45–19:15 (MSK) 16:45–17:15 (CET) 10:45–11:15 (NYT) 07:45–08:15 (PDT)	<p style="text-align: center;">Farrukh Mukhamedov (United Arab Emirates University) A Quantum Markov Chain approach to Phase Transitions for quantum Ising model with competing XY-interactions on a Cayley tree</p>
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01:15–01:45 (JST) 19:15–19:45 (MSK) 17:15–17:45 (CET) 11:15–11:45 (NYT) 08:15–08:45 (PDT)	<p style="text-align: center;">Goran Djordjevic (University of Nis) Classical and Quantum Dynamics of DBI Type Lagrangians in p-Adic Context</p>
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Friday, 27 November

22:00–22:45 (JST) 16:00–16:45 (MSK) 14:00–14:45 (CET) 08:00–08:45 (NYT) 05:00–05:45 (PDT)	Igor Volovich (Steklov Mathematical Institute of RAS) Integrability of quantum theory and categories
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22:50–23:35 (JST) 16:50–17:35 (MSK) 14:50–15:35 (CET) 08:50–09:35 (NYT) 05:50–06:35 (PDT)	Branko Dragovich (Institute of Physics Belgrade) Cosmology of nonlocal gravity
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23:45–00:15 (JST) 17:45–18:15 (MSK) 15:45–16:15 (CET) 09:45–10:15 (NYT) 06:45–07:15 (PDT)	Alexey Koshelev (Universidade da Beira Interior, Covilh) Analytic infinite derivative field theories: classical and quantum aspects
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00:15–00:45 (JST) 18:15–18:45 (MSK) 16:15–16:45 (CET) 10:15–10:45 (NYT) 07:15–07:45 (PDT)	Ekaterina Pozdeeva (Skobeltsyn Institute of Nuclear Physics MSU) Cosmological attractor in Einstein-Gauss-Bonnet gravity
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00:45–01:15 (JST) 18:45–19:15 (MSK) 16:45–17:15 (CET) 10:45–11:15 (NYT) 07:45–08:15 (PDT)	Evgeniy Shavgulidze (Moscow State University) Polar Decomposition of the Wiener Measure and the Schwarzian Theory
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Closing

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4th week

Monday, 30 November

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Alberto Barchielli (Politecnico di Milano) A quantum optomechanical system in a Mach-Zehnder interferometer
23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	Maksim Shirokov (Steklov Mathematical Institute of RAS) Optimal form of the Kretschmann-Schlingemann- Werner theorem for energy-constrained quantum channels and operations
00:00–00:20 (JST) 18:00–18:20 (MSK) 16:00–16:20 (CET) 10:00–10:20 (NYT) 07:00–07:20 (PDT)	Nikolay Chuprikov (Tomsk State Pedagogical University) On the optical-mechanical analogy of the Dirac theory
00:25–00:50 (JST) 18:25–18:50 (MSK) 16:25–16:50 (CET) 10:25–10:50 (NYT) 07:25–07:50 (PDT)	Denis Borisov (Ufa Federal Research Centre of the RAS) Resolvents of graphs with small edges

Tuesday, 1 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	<p>Richard Kerner (Sorbonne University) Unifying colour $SU(3)$ with Z_3-graded Lorentz-Poincaré Algebra</p>
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	<p>Miguel A.F. Sanjuan (Rey Juan Carlos University) Binary Black Hole Shadows: Chaos in General Relativity</p>
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00:00–01:00 (JST) 18:00–19:00 (MSK) 16:00–17:00 (CET) 10:00–11:00 (NYT) 07:00–08:00 (PDT)	<p>Jean-Bernard Bru (University of the Basque Country) Large Deviations for Fermions at Equilibrium - An Approach to Macroscopic Behavior at Nanoscales</p>
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Wednesday, 2 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	<p>Mukadas Missarov (Kazan Federal University) Generalization of the hierarchical model on the two-dimensional lattice</p>
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	<p>Roberto Quezada (Metropolitan Autonomous University, Mexico) Breaking of the similarity principle in Markov generators of low density limit.</p>
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00:00–00:25 (JST) 18:00–18:25 (MSK) 16:00–16:25 (CET) 10:00–10:25 (NYT) 07:00–07:25 (PDT)	<p>Vasily Denisov (Moscow State University) Theorems on stabilization of solutions of parabolic equations</p>
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00:30–00:50 (JST) 18:30–18:50 (MSK) 16:30–16:50 (CET) 10:30–10:50 (NYT) 07:30–07:50 (PDT)	<p>Arseny Mironov (Prokhorov General Physics Institute of the RAS) The Ritus-Narozhny conjecture and resummation of radiative corrections in QED in a constant crossed field</p>
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Thursday, 3 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	<p style="text-align: center;">Tatiana Dudnikova (Keldysh Institute of Applied Mathematics) Convergence to stationary nonequilibrium states for Hamiltonian dynamical systems</p>
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	<p style="text-align: center;">Bassano Vacchini (University of Milan) Role of local and non-local master equations in the description of non-Markovian open quantum system dynamics</p>
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00:00–00:20 (JST) 18:00–18:20 (MSK) 16:00–16:20 (CET) 10:00–10:20 (NYT) 07:00–07:20 (PDT)	<p style="text-align: center;">Sergey Postnov (Trapeznikov Institute of Control Sciences) Optimal control problems investigation for fractional diffusion and diffusion-wave equations</p>
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00:25–00:45 (JST) 18:25–18:45 (MSK) 16:25–16:45 (CET) 10:25–10:45 (NYT) 07:25–07:45 (PDT)	<p style="text-align: center;">Abdessatar Souissi (Qassim University, Saudi Arabia) Diagonalizability of quantum Markov States on trees</p>
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Friday, 4 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	<p>Zoran Rakic (University of Belgrade) On non-local modified gravity. On the square root model and its cosmological solutions</p>
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	<p>Sergey Vernov (Moscow State University) The effective potential method for cosmological models with the Gauss-Bonnet term</p>
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00:00–00:20 (JST) 18:00–18:20 (MSK) 16:00–16:20 (CET) 10:00–10:20 (NYT) 07:00–07:20 (PDT)	<p>Sergey Mayburov (Lebedev institute of physics RAS) Oscillations of nucleus decay parameters in nonlinear quantum mechanics</p>
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00:25–00:45 (JST) 18:25–18:45 (MSK) 16:25–16:45 (CET) 10:25–10:45 (NYT) 07:25–07:45 (PDT)	<p>Mikhail Dolgoplov (Samara State Technical University) Scanning and compaction of discrete ion fluxes by the magnetic field system and the ion-emission quantum energy converter</p>
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Steklov Mathematical Institute, Moscow

5th week

Monday, 7 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	<p>Fridrikh Dzheparov (Institute for Theoretical and Experimental Physics) Pressure dependence of phonon populations and non-standard quasiadditive integrals of motion</p>
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	<p>Valery Frolov (University of Alberta, Edmonton) Spinoptics in a curved spacetime</p>
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Tuesday, 8 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	<p>Irina Aref'eva (Steklov Mathematical Institute of RAS) Holography and random matrices</p>
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	<p>Vladimir Belokurov (Moscow State University, Institute of Nuclear Research RAS) Schwarzian functional integrals calculus</p>
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Wednesday, 9 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Dmitry Levkov (Institute of Nuclear Research RAS) Semiclassical S-matrix in dilaton gravity with a boundary
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23:00–23:20 (JST) 17:00–17:20 (MSK) 15:00–15:20 (CET) 09:00–09:20 (NYT) 06:00–06:20 (PDT)	Boris Volkov (Moscow Institute of Physics and Technology) Levy Laplacians, holonomy group and instantons on 4-manifolds
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23:25–23:45 (JST) 17:25–17:45 (MSK) 15:25–15:45 (CET) 09:25–09:45 (NYT) 06:25–06:45 (PDT)	Yana Kinderknecht (Butko) (Technical University of Braunschweig) Stochastic representations for solutions of a class of integro-differential evolution equations
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Thursday, 10 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Vladimir Korepin (CN Yang Institute for Theoretical Physics of Stony Brook University) Lattice nonlinear Schrödinger equation
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	Nikita Slavnov (Steklov Mathematical Institute of RAS) Quantum Inverse Scattering Method and scalar products
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Friday, 11 December

22:00–23:00 (JST) 16:00–17:00 (MSK) 14:00–15:00 (CET) 08:00–09:00 (NYT) 05:00–06:00 (PDT)	Franco Fagnola (Polytechnic University of Milan) Supercritical Poincaré-Andronov-Hopf bifurcation in a mean field quantum laser equation
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23:00–00:00 (JST) 17:00–18:00 (MSK) 15:00–16:00 (CET) 09:00–10:00 (NYT) 06:00–07:00 (PDT)	Angel Rivas (Complutense University of Madrid) Strong coupling thermodynamics of open quantum systems
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00:00–01:00 (JST) 18:00–19:00 (MSK) 16:00–17:00 (CET) 10:00–11:00 (NYT) 07:00–08:00 (PDT)	Anton Trushechkin (Steklov Mathematical Institute of RAS) Redfield, local and global quantum master equations from the viewpoint of quantum stochastic limit
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01:00–02:00 (JST) 19:00–20:00 (MSK) 17:00–18:00 (CET) 11:00–12:00 (NYT) 08:00–09:00 (PDT)	Discussion
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