

**International Conference**  
**“Real and Complex Dynamical Systems”,**  
**dedicated to Prof. Yulij Ilyashenko’s 80-th Birthday**  
**Tsaghkadzor, Armenia, November 20–25, 2023**

**SCHEDULE**

*All the talks and all the meals (except for lunch and dinner at Wednesday, November 22) will take place at **Ripa Hotel**, Tsaghkadzor.*

**Monday, November 20**

- 9:00–10:00 Breakfast
- 8:30–10:00 Registration
- 10:00–10:15 Opening
- 10:15–10:55 Dmitry Treschev  
*Normalization flow*
- 10:55–11:25 Coffee
- 11:25–12:05 Raphael Krikorian  
*Divergence and convergence of Birkhoff Normal Forms*
- 12:15–12:45 Sanjeeva Balasuriya  
*2D invariant manifolds in 3D flows: perturbed locations under general perturbations and instantaneous flux*
- 13:00–14:30 Lunch
- 15:30–16:10 Frank Loray (online)  
*Neighborhoods of curves in complex surfaces*
- 16:20–16:50 Sergei Voronin  
*Degenerated singular points of binary differential equations*
- 16:50–17:20 Coffee
- 17:20–18:00 Laurent Stolovitch  
*On neighborhoods of embedded complex tori*
- 18:10–18:40 Irina Astashova  
*Dynamical systems in asymptotic behavior of solutions to higher-order nonlinear differential equations and its asymptotic equivalence*
- 19:00–21:00 Dinner

**Tuesday, November 21**

- 9:00–10:00 Breakfast
- 10:00–10:20 Zhaofeng Lin  
*Gaussian limit of the process of moduli for the Ginibre and hyperbolic ensembles*
- 10:30–10:50 Sergei Gorbunov  
*Speed of convergence of linear functionals in DPP with Bessel kernel*
- 10:50–11:20 Coffee
- 11:20–12:00 Konstantin Khanin  
*Typical rotation numbers for families of circle maps with singularities*

12:10–12:40 Alexey Klimenko  
*Determinantal processes and decomposition of functions into series defined by values in points of a random configuration*

13:00–14:30 Lunch

15:00–15:40 Alexandra Skripchenko  
*Ergodic properties of certain classes of interval translation mappings*

15:50–16:20 Armen Bagdasaryan  
*Optimal Flows in Dynamic Transport Networks and Replicator Dynamical Systems*

16:20–18:20 Coffee and poster session  
*Posters:* Timur Bakiev, Ekaterina Chilina, Alexey Glutsyuk, Elena Nozdrinova, Polina Shaikhulina, Danil Shubin, Ilya Tolstukhin, Ekaterina Tsaplina.

18:45–20:15 Dinner

20:30–21:10 Alexander Bufetov  
*Babylonian lunar theory* (informal evening lecture)

### Wednesday, November 22

8:50–9:40 Breakfast

9:40–10:20 Marco Mazzucchelli  
*Surfaces of section for geodesic flows of closed surfaces*

10:20–10:50 Coffee

10:50–11:30 Sergei Tabachnikov  
*Bicycling geodesics and elastic curves*

From 12:00 Excursion (or hike). During it, lunch and dinner will be organized

### Thursday, November 23

9:00–9:50 Breakfast

9:50–10:30 Sergei Pilyugin  
*Shadowing in hyperbolic and nonhyperbolic dynamical systems*

10:40–11:10 Andrey Dukov  
*Multiple limit cycles that appear from hyperbolic polycycles*

11:10–11:40 Coffee

11:40–12:10 Dmitry Filimonov  
*Singularities in generic two-parameter families of vector fields on 2-sphere*

12:20–12:50 Yury Kudryashov  
*Computer-readable proofs and dynamical systems*

13:00–14:30 Lunch

15:30–16:10 Bertrand Deroin (online)  
*Statistical properties of generic polynomial differential equations in complex 3-space, after Félix Lequen*

16:10–16:40 Coffee

16:40–17:20 Yulij Ilyashenko  
*New trends in the glocal bifurcation theory in the plane*

18:00–19:00 Duduk concert

19:00 Banquet

## Friday, November 24

- 9:00–10:00 Breakfast
- 10:00–10:40 Mikhail Lyubich  
*Structure of Feigenbaum Henon maps*
- 10:50–11:20 Natalia Goncharuk  
*Renormalization operators and Arnold tongues*
- 11:20–11:50 Coffee
- 11:50–12:30 Artur Ishkhanyan  
*Heun-function solutions of the Schrodinger equation*
- 13:00–14:30 Lunch
- 15:00–15:40 Anton Gorodetski  
*Dynamical Methods in Spectral Theory of Ergodic Schrodinger Operators*
- 15:50–16:30 Victor Kleptsyn  
*Holder regularity of stationary measures*
- 16:30–17:00 Coffee
- 17:00–17:40 Melvin Yeung (online)  
*An introduction to the Theorem of Dulac*
- 17:50–18:30 Askold Khovanskii (online)  
*Fibered toric varieties*
- 18:45–20:15 Dinner

## Saturday, November 25

- 8:50–9:40 Breakfast
- 9:40–10:20 Olga Pochinka  
*On a structure of non-wandering set of an omega-stable 3-diffeomorphism possessing a hyperbolic attractor*
- 10:30–11:00 Elena Gurevich  
*Framed link as topological invariant of polar flows on four-dimensional manifolds*
- 11:00–11:30 Coffee
- 11:30–12:00 Ivan Shilin  
*Attractors with non-invariant interior*
- 12:10–12:50 Vladlen Timorin  
*Aperiodic points for dual billiards*
- 12:50 Closing
- 13:00–14:30 Lunch
- 18:45–20:15 Dinner

**Babylonian lunar theory**  
(informal evening lecture)

Alexander Bufetov

Tuesday 20:30-21:10

**Abstract.** The Babylonian tablets with the ephemerides of the moon and the planets reveal an underlying precise mathematical theory: the Babylonian astronomers almost used splines. The simpler System A is the tersitu of Naburimannu, indicate the tablets, while the more intricate System B is the tersitu of Kidinnu. While most of our evidence comes from the Seleucid era, the systems themselves are believed to have been developed under the Achaemenids. In this short communciation, we will briefly review the Systems A and B. Following the discovery of numerous astronomical tablets by the Jesuit priest Johann Nepomuk Strassmaier, the reconstruction of the Babylonian lunar theory was started by Franz Xaver Kugler in 1911 and developed by Otto Neugebauer in the 1930s-1950s. The breakthrough of Kugler and Neugebauer was all the more dramatic in that it was completely unexpected: the Classical sources, while frequently mentioning the “Chaldaean astronomers”, give not the slightest indication concerning the mathematical method of the Babylonians.