

# Nonlinear Phenomena in Biology, Ecology, Physics and Mechanics

International Conference on the Occasion of the 70<sup>th</sup> Birthday of  
Professor Messoud Efendiev

22.10.2023 – 26.10.2023

UNEC - Azerbaijan State University of Economics



CABINET OF MINISTERS  
REPUBLIC OF AZERBAIJAN



MINISTRY OF SCIENCE AND EDUCATION  
REPUBLIC OF AZERBAIJAN



STATE COMMITTEE ON WORK WITH DIASPORA  
OF THE REPUBLIC OF AZERBAIJAN

**Nonlinear  
Phenomena in  
Biology,  
Ecology, Physics and  
Mechanics**

International  
Conference on the  
Occasion of the 70<sup>th</sup>  
Birthday of Professor  
Messoud Efendiev

22.10.2023 –  
26.10.2023

## Conference Venue: UNEC

### Conference Venue:

Azerbaijan State University of Economics (UNEC)

Main Building: Istiglaliyyat Street 6, Baku  
and especially 3rd campus of UNEC Faculties





**Nonlinear  
Phenomena in  
Biology,  
Ecology, Physics and  
Mechanics**

International  
Conference on the  
Occasion of the 70<sup>th</sup>  
Birthday of Professor  
Messoud Efendiev

22.10.2023 –  
26.10.2023

## Conference Hotel: Courtyard Baku

### Conference Venue:

Courtyard Baku by Marriot

300-303 quarter, Baku AZ1009 Azerbaijan



source:  
[https://www.facebook.com/  
CourtyardBaku/?locale=sw\\_  
KE](https://www.facebook.com/CourtyardBaku/?locale=sw_KE)

## Preliminary Program 22. & 23. October 2023

22. October 2023	
	Arrival of the participants
23. October 2023	
09:00 – 10:30	Visit of the tomb of national leader Heydar Aliyev and the alley of martyrs
10:30 – 11:00	Registration of the participants in the 3rd campus of UNEC Faculties
11:00 – 12:45	Opening Ceremony
12:45 – 14:00	Lunch in the 3rd campus of UNEC Faculties
14:00 – 14:20	Michael Cant: <i>War and Peace Since Life Began: How Intergroup Conflict Shapes the Evolution of Biological Societies</i>
14:25 – 14:45	Konstantin Khanin: <i>First Passage Percolation in Random Potentials of the Product Type</i>
14:50 – 15:10	Manfred Büchele: <i>Nonlinear Phenomena and Possible Significance in Fruit Growing Research</i>
15:15 – 15:35	Hermann Eberl: <i>A Spatio-Temporal Model of Fireblight During Bloom</i>
15:40 – 16:00	Coffee break
16:00 – 16:20	Mitsuharu Otani: <i>Existence and Nonexistence of Global Solutions for Fujita-Type Equations with Some Nonlinear Boundary Conditions</i>
16:25 – 16:45	Massimo Grossi: <i>Critical Points of Semi-Stable Solutions of Laplace-Beltrami Operator on Surfaces</i>
16:50 – 17:10	Feridun Hamdullahpur: <i>Deep Convolutional Surrogates and Freedom in Thermal Design</i>
17:15 – 17:35	Hans Knüpfer: <i>Optimal size for magnetic domains in Thin Ferromagnetic Films</i>
17:40 – 18:40	Dinner in the 3rd campus of UNEC Faculties
Drive to the Hajibeyov Baku Academy of Music	
19:30 –	Concert at the Hajibeyov Baku Academy of Music



# The Tomb of National Leader Heydar Aliyev and the Alley of Martyrs

## Venue:

Tomb of national leader Heydar Aliyev and the alley of martyrs  
Memorial Nagorny Park, Baku



Nonlinear  
Phenomena in  
Biology,  
Ecology, Physics and  
Mechanics

International  
Conference on the  
Occasion of the 70<sup>th</sup>  
Birthday of Professor  
Messoud Efendiev

22.10.2023 –  
26.10.2023

# The Hajibeyov Baku Academy of Music

## Concert Venue:

The Hajibeyov Baku Academy of Music  
Azerbaijan Prospect 23, Baku



22.10.2023 –  
26.10.2023

22.10.2023

23.10.2023

24.10.2023

25.10.2023

26.10.2023

## Preliminary Program 24. October 2023

	24. October 2023 (morning)
08:30	Bus transfer from hotel to UNEC campus
09:00 – 09:20	Sivabal Sivaloganathan: <i>A Coupled PDE Model of High Intensity Ultrasound Heating of Biological Tissue</i>
09:25 – 09:45	Sevda Isayeva: <i>Transmission Acoustic Problems for Nonstationary Equations</i>
09:50 – 10:10	Taylan Sengül: <i>Two Approaches to Instability Analysis of the Viscous Burgers' Equation</i>
10:15 – 10:35	Araz R. Aliev: <i>On the Conditions for the Existence of Smooth Solutions from Sobolev-Type Space for two Classes of Fourth Order Operator-Differential Equations</i>
10:40 – 11:00	Coffee break
11:00 – 11:20	Vahid Kadymov: <i>Contact Problems of Plastic Flow in a Thin Layer: Theory, Boundary Value Problems, Solutions and Applications</i>
11:25 – 11:45	Akiko Morimura: <i>Weak Solvability for Nonlinear Parabolic Equations Having Non-Monotone Boundary Conditions</i>
11:50 – 12:10	Tibor Krisztin: <i>Periodic and Connecting Orbits for MacKey-Glass Type Equations</i>
12:15 – 12:35	Yihong Du: <i>Propagation Dynamics of the Nonlocal KPP Equation with Free Boundaries</i>
12:40 – 14:00	Lunch in the 3rd campus of UNEC Faculties

## Preliminary Program 24. October 2023

	24. October 2023 (afternoon)
14:00 – 14:20	Carlos Rocha: <i>On the Structure of the Infinitesimal Generators of Semigroups with Discrete Lyapunov Functionals</i>
14:25 – 14:45	Varga Kalantarov : <i>Stablizaition of Solutions to Equations Modelling Dynamics of Viscoelatic Fluids</i>
14:50 – 15:10	Toyohiko Aiki: <i>New Mathematical Model for Elastic Collision</i>
15:15 – 15:35	Florian Rupp: <i>Modeling &amp; Simulating the Stochastic Dynamics of Games with Three Pure Strategies</i>
15:40 – 16:00	Coffee break
16:00 – 16:20	Radosław Czaja: <i>Finite-Dimensional Global and Exponential Attractors for Some Fourth Order Problems in <math>R^N</math></i>
16:25 – 16:45	Anibal Rodriguez-Bernal: <i>Homogeneous Spaces, Operators and Semigroups: Optimal Estimates, Spectral Analysis and Perturbations</i>
16:50 – 17:10	t.b.c.
17:15 – 17:35	t.b.c.
Walking tour in Icerisher (historic part of Baku)	
19:00 – 22:00	Banquet at the Mugam Restaurant

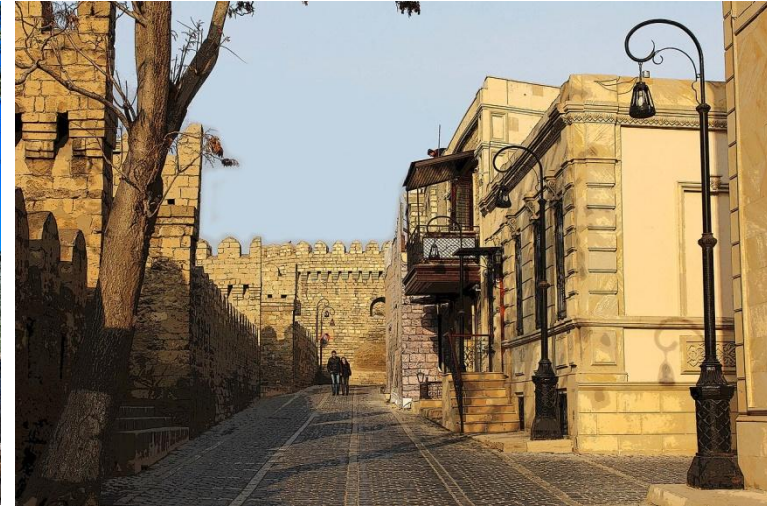


Nonlinear  
Phenomena in  
Biology,  
Ecology, Physics and  
Mechanics

International  
Conference on the  
Occasion of the 70<sup>th</sup>  
Birthday of Professor  
Messoud Efeudiev

22.10.2023 –  
26.10.2023

## Some Impressions of Icheriseher (Historic Part of Baku)





Nonlinear  
Phenomena in  
Biology,  
Ecology, Physics and  
Mechanics

International  
Conference on the  
Occasion of the 70<sup>th</sup>  
Birthday of Professor  
Messoud Efendiev

22.10.2023 –  
26.10.2023

## Some Impressions of the Mugam Restaurant

**Banquet Venue:**

Mugam Restaurant

Haqiqat Rzayeva Steet 9, Baku



## Preliminary Program 25. October 2023

	25. October 2023 (morning)
08:30	Bus transfer from hotel to UNEC campus
09:00 – 09:20	Tomomi Yokota: <i>Boundedness in a Degenerate Chemotaxis System for Tumor Invasion</i>
09:25 – 09:45	Umayra Taghiyeva: <i>Climate Change as a Nonlinear Phenomenon</i>
09:50 – 10:10	Ali Ashher Zaidi: <i>Pantograph Type Partial Differential Equations and Tumor Growth</i>
10:15 – 10:35	Yoichi Enatsu: <i>Semi Wave Solutions for a Diffusive SI Model with Free Boundary</i>
10:40 – 11:00	Coffee break
11:00 – 11:20	Stefanie Sonner: <i>Degenerate Reaction Diffusion Systems Modeling in Biofilm Growth</i>
11:25 – 11:45	Mads Peter Sørensen: <i>Reaction Diffusion Advection Induced Growth Patterns of Biofilms in a Centrifugal Lab-on-a-Disc Platform</i>
11:50 – 12:10	Ekkehard Holzbecher: <i>On Mass Transport in Sediments and Soil</i>
12:15 – 12:35	Elena Popova: <i>Stability of a Spacecraft Equipped with a Sail Moving Along an Intense Laser Beam</i>
12:40 – 14:00	Lunch in the 3rd campus of UNEC Faculties



22.10.2023 –  
26.10.2023

22.10.2023

23.10.2023

24.10.2023

25.10.2023

26.10.2023

## Preliminary Program 26. October 2023

	26. October 2023
08:30	Bus transfer from hotel to UNEC campus
09:00 – 09:20	Anzor Beridze: <i>On Axiomatic Homology Theory of General Topological Spaces</i>
09:25 – 09:45	Roland Duduchava: <i>Shell Equation Derived by the <math>\Gamma</math>-Convergence</i>
09:50 – 10:10	Kota Kumazaki: <i>On a Multiscale Problem Describing Water Swelling in Porous Materials</i>
10:15 – 10:35	Jacky Cresson: <i>Dynamics of Stochastic Hamiltonian Systems</i>
10:40 – 11:00	Coffee break
11:00 – 11:20	Rövshan Khalilov: <i>Iron-Containing Nanoparticles in Biological Systems and its Biomedical Applications</i>
11:25 – 11:45	Aziz Eftehari: <i>Combination of in Vitro and Mathematical Investigations by Adverse Outcome Pathway to Identify Toxicants of the Mitochondria</i>
11:50 – 12:10	t.b.c.
12:15 – 12:35	t.b.c.
12:40 – 13:00	Closing ceremony

## Scientific Committee:

- A. Benilan (Spain)
- H. Berestycki (France)
- Y. Du (Australia)
- F. Hamel (France)
- M. Sörensen (Denmark)
- M. Otani (Japan)
- C. Rocha (Portugal)
- F. Rupp (Germany)
- A. Stevens (Germany)
- S.M.Verduyn Lunel (The Netherlands)
- J. Webb (United Kingdom)
- J. Wu (Canada)

## Local Organizing Committee:

- Cabinet of Ministers,  
Republic of Azerbaijan
- Ministry of Science and Education,  
Republic of Azerbaijan
- State Committee on Work with Diaspora,  
Republic of Azerbaijan
- UNEC - Azerbaijan State University of  
Economics
- BDU - Baku State University
- IMM - Institute of Mathematics and  
Mechanics

