

Bahçeşehir University, Istanbul, Türkiye
Analysis & PDE Center, Ghent University, Ghent, Belgium
Institute Mathematics & Math. Modeling, Almaty, Kazakhstan

“Analysis and Applied Mathematics”

Weekly Online Seminar

Seminar leaders:

Prof. Allaberen Ashyralyev (BAU, Istanbul),
Prof. Michael Ruzhansky (UGent, Ghent),
Prof. Makhmud Sadybekov (IMMM, Almaty)

Date: **Tuesday, March 25, 2025**

Time: 14.00-15.00 (Istanbul) = 12.00-13.00 (Ghent) = 16.00-17.00 (Almaty)

Zoom link: <https://us02web.zoom.us/j/6678270445?pwd=SFNmQUlVTDtRaHlDa-VYrN3l5bzJVQT09>, **Conference ID:** 667 827 0445, **Access code:** 1

Speaker:

Prof. Dr. Mahir Rasulov

Institute of Oil and Gas of Ministry of Science and Education, Azerbaijan

Title: Necessary conditions for the correctness for scalar hyperbolic linear equation with nonlocal boundary conditions

Abstract: In $D = \{0 < x < 1, 0 < t < 1\}$ the initial value problem for the scalar hyperbolic type equation

$$\frac{\partial u(x, t)}{\partial t} + \frac{\partial u(x, t)}{\partial x} = 0, \quad (1)$$

with general nonlocal boundary conditions

$$\ell_k[u] \equiv \alpha_{k1}u(0, y) + \alpha_{k2}u(y, 0) + \alpha_{k3}u(1, 1 - y) + \alpha_{k4}u(1 - y, 1) = \varphi_k(y), \quad k = 1, 2 \quad (2)$$

is investigated. The question of correctness of a considered problem is studied. The basic relationship of necessary conditions ensuring the correctness of the problem is established. Two specific examples are given to demonstrate the proposed method.

Biography:

Mahir Rasulov is the Doctor of Technical Sciences and the head of the department at the Oil and Gas Institute of Ministry of Science and Education Republic of Azerbaijan. He has research interests in the following areas: differential equations of fractional order and numerical methods for some problems of mathematical physics.