

Bahçeşehir University, Istanbul, Turkey  
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 29, 2022**

Time: 14.00-15.00 (Istanbul) = 13.00-14.00 (Ghent) = 17.00-18.00 (Almaty)

Zoom link: <https://us02web.zoom.us/j/6678270445?pwd=SFNmQUlVTD0tRaH-IDaVYrN3I5bzJVQT09>, **Conference ID:** 667 827 0445, **Access code:** 1

### Speaker:

**Prof. Dr. Ravshan Ashurov**

*Institute of Mathematics & National University of Uzbekistan, Tashkent, Uzbekistan*

Title: **Solution of the problem of generalized localization for spherical partial sums of multiple Fourier series**

Abstract: It is well known that Luzin’s conjecture has a positive solution in one dimensional case and it is still open in multidimensional case for the spherical partial sums:

$$S_{\lambda}f(x) = \sum_{|n|^2 < \lambda} f_n e^{inx}.$$

Historically progress with solving the Luzin’s conjecture has been made by considering easier problems. One of such easier problems for  $S_{\lambda}f(x)$  was suggested by V. A. Il’in in 1968 and this problem is called **the generalized localization principle** for the spherical partial sums. Recently, the problem of generalized localization was completely solved in papers [1] and [2]. In this talk we first give a short survey on convergence a.e. of one dimensional and multidimensional Fourier series, then indicate a sketch of the above mentioned result’s proof.

### References:

- [1] R. R. Ashurov, Generalized localization for spherical partial sums of multiple Fourier series, *J. Fourier Anal. Appl.*, **25** (2019), 3174–3183.
- [2] R. R. Ashurov, Generalized Localization for Spherical Partial Sums of Multiple Fourier Series, *Dokl. Math.*, **100** (2019), 505-507.

## Biography:



Ravshan Ashurov graduated in 1978 from Moscow State University with a distinction degree in mathematics. He defended his candidate's thesis in 1981 and his doctoral dissertation in 1992 at the Moscow State University.

Ravshan Ashurov was a Scientific Researcher at the Birmingham University (UK) in 1984-1985 and Bowling Green State University (USA) in 2002. From 2009 to 2012 he was a Senior Fellow Researcher at the University of Putra Malaysia. He was an Invited Professor at the Vanderbilt University (USA) in 2018.

Ravshan Ashurov holds currently a position of a Professor at the National University of Uzbekistan. He is the leading Scientific Researcher and the head of the department of Differential Equations at the Institute of Mathematics, Academy of Science of Uzbekistan.

Prof. Ravshan Ashurov is the author of 8 textbooks, 4 monographs and over 100 articles. His topics of research deal mostly with Spectral theory of Differential Operators, Harmonic Analysis, Partial and Fractional Differential Equations.