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, May 31, 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=SFNmQUIvT0tRaH-lDaVYrN3l5bzJVQT09, **Conference ID:** 667 827 0445, **Access code:** 1

Speaker:
Prof. Dr. Tunç Mısırlıoğlu
Istanbul Kültür University, Istanbul, Turkey

Title: **Modulus of Non-Semicompact Convexity**

Abstract: The talk will consist of two parts. In the first part we develop the cornerstone theorem given in [2, Proposition 2.1], which states that for a Banach lattice E with order continuous norm if D is a PL-compact subset of E then $\chi(D)=\rho(D)$, by showing that if a Banach lattice F has the positive Schur property then $\rho(D)= \omega(D)$ for any norm bounded subset D of F. Here, χ, ρ, and ω are Hausdorff measure of non-compactness, the measure of non-semicompactness introduced in [2], and the measure of weak non-compactness, respectively. Secondly, we introduce the notion of the modulus of non-semicompact convexity in Banach lattices defined with the help of the measure of non-semicompactness in Banach lattices. We extend the results obtained in [1] by showing that the modulus of non-semicompact convexity is continuous and has some extra properties in reflexive Banach lattices.

References:
[1] *Y. Banas, On modulus of noncompact convexity and its properties. Canad. Math. Bull.,* **30** *(1987), 186-192.*
[2] *B. de Pagter & A.R. Schep, Measures of non-compactness of operators on Banach lattices, J. Funct. Anal.,* **78** *(1988), 31-55.*

Biography:
Tunç Mısırlıoğlu received his BSc degree from the Department of Mathematics of İstanbul University (İU) and his MSc degree and PhD from the Department of Mathematics of İstanbul Technical University. Before joining İstanbul Kültür University (İKU) as a faculty member at the Department of Mathematics and Computer Sciences in 2009, he

worked at the Department of Mathematics of İU as a faculty member for about 3 years. His research focuses on the fields of functional analysis and operator theory, Banach lattices and positive operators, invariant subspace problem, and measure of noncompactness. He has also been serving as a Director of Institute of Graduate Studies at İKU since 2017.