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, June 11, 2024**
Time: 14.00-15.00 (Istanbul) = 13.00-14.00 (Ghent) = 16.00-17.00 (Almaty)

Zoom link: https://us02web.zoom.us/j/6678270445?pwd=SFNmQUIvT0tRaH-lDaVYrN3l5bzJVQT09, **Conference ID:** 667 827 0445, **Access code:** 1

Speaker:
Dr. Suleiman Ibrahim
Near East University, North Cyprus

Title: On the Absolute Stable Difference Scheme for Third Order Delay Partial Differential Equations

Abstract: The initial value problem for the third order delay differential equation in a Hilbert space with an unbounded operator is investigated. The absolute stable three-step difference scheme of a first order of accuracy is constructed and analyzed. This difference scheme is built on the Taylor's decomposition method on three and two points. The theorem on the stability of the presented difference scheme is proven. In practice, stability estimates for the solutions of three-step difference schemes for different types of delay partial differential equations are obtained. Finally, in order to ensure the coincidence between experimental and theoretical results and to clarify how efficient the proposed scheme is, some numerical experiments are tested.

Biography:
Suleiman Ibrahim received the Bachelor's degree in Mathematics from Bayero University Kano, Nigeria, in 2011, the Master's degree in Mathematics from Near East University, North Cyprus, in 2016, and the Ph.D. degree in Mathematics from Near East University, North Cyprus, in 2020. He is currently a Lecturer with the Faculty of Arts and Sciences at Near East University. His current research interests include delay differential equations and other advanced topics in mathematics.