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, October 1, 2024**
Time: 14.00-15.00 (Istanbul) = 13.00-14.00 (Ghent) = 16.00-17.00 (Almaty)

Place: Meeting room of Faculty of Engineering & Natural Sciences, BAU, D-415
Zoom link: https://us02web.zoom.us/j/6678270445?pwd=SFNmQUIvT0tRaHlDa-VYrN3l5bzJVQT09, **Conference ID:** 667 827 0445, **Access code:** 1

Speaker:
Ms. Hafida Guendouz
University of Mentouri Brothers, Constantine, Algeria

Title: On the numerical solution of hyperbolic evolution problem in a two-dimensional domain

Abstract: Numerical investigations into two-dimensional hyperbolic and parabolic equations have garnered considerable interest across various domains. In this work, the Galerkin method is applied to construct the numerical solution of the two-dimensional telegraph equation with variable coefficients. The related equation, extensively used in engineering, was derived in 1876 by Heaviside, who addressed the charging and discharging of a finite length of cable under the effects of induction.

This study demonstrates that the Galerkin method is a highly effective and powerful tool for numerically solving such problems. Several examples of numerical experiments are provided.

Biography:
Hafida Guendouz is a PhD student at Mentouri Brothers University, Constantine. She obtained her Master's degree in 2022 and currently specializing in partial differential equations under the supervision of Dounia Belakroum. Her research primarily focuses on evolution problems.