



UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

INSPEM WEEKLY SEMINAR

14/2019

Date & Time

18th April 2019 (Thursday) @ 10.00 am

Venue

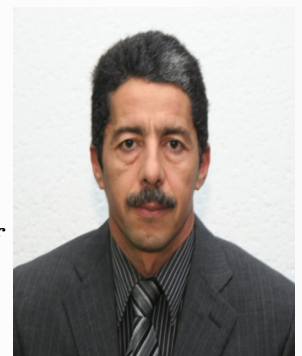
Al-Farabi Seminar Room, Second Floor, INSPEM

Presenters



Prof. Dr. Alov Rakhmatillo
NUU, Uzbekistan
The difference splitting scheme for hyperbolic systems with variable coefficients

Prof. Dr. Mohamed Jalel Atia
Qassim University, KSA
Various generalization of Chebyshev polynomials open problems



ABSTRACT

10.00 - 11.00 am: The difference splitting scheme for hyperbolic systems with variable coefficients

In this study, the difference splitting scheme for the numerical calculation of stable solutions of a two-dimensional linear hyperbolic system with dissipative boundary conditions in the case of variable coefficients with lower terms are considered. A discrete analogue of the Lyapunov function is constructed and an a priori estimate is obtained for the proposed method. The obtained a priori estimate allows us to assert the exponential stability of the numerical scheme.

11.15 - 12.15 pm: Various generalization of Chebyshev polynomials open problems

I will talk about symmetric semiclassical polynomial sequences of

- class 2 orthogonal with respect to $\frac{|x^2 - \frac{1}{2}|^p}{\sqrt{1-x^2}}$, $p > -1$ on $[-1, 1]$ [1],
- class 3 orthogonal with respect to $\frac{|x^3 - \frac{3}{4}x|^p}{\sqrt{1-x^2}}$, $p > -1$ on $[-1, 1]$.

For the first case, the coefficients of the three-term recurrence relation of corresponding orthogonal polynomials are explicitly given.

For the second case, some results will be given and proved, and some other will be given as conjectures.

All these results reduce to the Chebyshev ones for $p = 0$.