Abstract

In this talk, we will review some applications of formal orthogonal polynomials, Padé approximants, and extrapolation methods to the solution of problems in numerical analysis. These problems are

- Lanczos method for solving systems of linear equations,

- error estimates for linear systems,

- Tikhonov regularization of ill-conditioned linear systems,

- the PageRank problem for web search,

- treatment of the Gibbs phenomenon for Fourier series.