

# Polynomial approximation of functions with exponential monotonicity

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## Abstract

The approximation of functions defined on  $(0, \infty)$  and with exponential monotonicity at the endpoints of the domain has not received attention in the literature.

Recently, the authors have introduced the weight

$$w(x) = x^\gamma e^{-x^{-\alpha} - x^\beta}, \quad x > 0,$$

and studied the corresponding sequence of orthonormal polynomials. This has allowed to develop the theory of polynomial approximation with the weight  $w$  and constructive processes in numerical analysis.

In this talk we will show some approximation result using Lagrange interpolation.

**Keywords:** Polynomial approximation, Exponential weights, Lagrange interpolation.