

FREUD AND SUB-RANGE FREUD POLYNOMIALS AND THEIR ZEROS

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Abstract

Freud and sub-range Freud polynomials are orthogonal with respect to the weight function $w(t) = |t|^\mu \exp(-|t|^\nu)$, $\mu > -1$, $\nu > 0$, supported on the whole real line \mathbb{R} resp. on strict subintervals thereof. The zeros of these polynomials are studied here as functions of ν and shown, analytically and empirically by computation, to collectively increase or decrease on appropriate intervals of the variable ν .