

Abstract

Many associated orthogonal q -polynomials satisfy a three term recurrence relation with a common specific form. In this paper it is developed a functional analytic method for the study of monotonicity properties of the lowest zero of such associated orthogonal q -polynomials, based on the specific form of the related recurrence relation. Differential inequalities involving the lowest zero of associated continuous q -Jacobi, associated big q -Jacobi, associated Askey-Wilson polynomials and related ones are obtained.