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ETNA
Kent State University
etna@mcs.kent.edu

THREE CASES OF NORMALITY OF HESSENBERG'S MATRIX RELATED WITH ATOMIC COMPLEX DISTRIBUTIONS*

VENANCIO TOMEO† AND EMILIO TORRANO‡

Abstract. In this work we prove that Hessenberg's infinite matrix, associated with an hermitian OPS that generalizes the Jacobi matrix, is normal under the assumption that the OPS is generated from a discrete infinite bounded distribution of non-aligned points in the complex plane with some geometrical restrictions. This matrix is also normal if we consider a real bounded distribution with a finite amount of atomic complex points. In this case we still have normality with infinite points, but an additional condition is required. Some other interesting properties of that matrix are obtained.

Key words. orthogonal polynomials, Hessenberg's matrix, normal operator.

AMS subject classifications. 33C45.

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†Dpto. Algebra E.U. Estadística UCM.
‡Dpto. Mat. Aplicada Fac. Informática UPM.