Electronic Transactions on Numerical Analysis.
Volume 19, pp. 105-112, 2005.

ISSN 1068-9613.

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

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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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*Received November 30, 2002. Accepted for publication May 10, 2003. Communicated by F. Marcellán.
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