

CONSTRUCTION OF LOBATTO AND KRONROD RULES FROM ORTHOGONAL LAURENT
POLYNOMIALS

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The construction of Gaussian rules can be viewed as a spectral decomposition of the tridiagonal Jacobi matrix generated by the Lanczos process. Radau and Lobatto rules follow from a modification of this matrix. Analogous rules exist for Laurent polynomials, polynomials that contain reciprocal powers. The analog of the tridiagonal recursion matrix is a pentadiagonal matrix. This talk discusses augmentations of the pentadiagonal matrix that yield Lobatto and Kronrod rules.