

Extension of the Dirichlet-Jordan Criterion for Exponential Weights

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The well-known Dirichlet-Jordan Criterion for Fourier series states that the trigonometric Fourier series of a 2π periodic function f having bounded variation converges to $(1/2)[f(x+0) + f(x-0)]$ for every x and this convergence is uniform on every closed interval on which f is continuous (Zygmund, Theorem 2.8.1- 1959). We extend this criterion to orthonormal polynomial expansions, and treat the even case of a more general class of exponential weights.