

Weighted- L^2 polynomial approximation in \mathbb{C}

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We study the density of polynomials in $H^2(\Omega, e^{-\varphi})$, the space of square integrable holomorphic functions in a bounded domain Ω in \mathbb{C} , where φ is a subharmonic function. In particular, we prove that the density holds in Carathéodory domains for any subharmonic function φ in a neighborhood of $\bar{\Omega}$. In non-Carathéodory domains, we prove that the density depends on the weight function, giving examples. This is joint with Séverine Biard and John Erik Fornæss.