

MONOMIAL BASES FOR HOLOMORPHIC FUNCTIONS ON BANACH SPACES WITH AN
UNCONDITIONAL BASIS

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We study monomial Schauder bases in spaces of entire holomorphic functions on complex Banach spaces. Let X be a complex Banach space admitting an unconditional Schauder basis, and let τ_0 denote the compact-open topology on $\mathcal{H}(X)$. We prove that the monomials associated with the basis of X , endowed with the square order in each homogeneous degree and with any compatible ordering, form a Schauder basis of $(\mathcal{H}(X), \tau_0)$. The proof is based on a fundamental system of compact solid subsets of X and on coordinatewise Fourier projections. These projections yield the estimate $c_{K,n} \leq n + 1$ for the basis constants of the degree- n monomials on the relevant compact sets, which allows us to apply an abstract criterion for S_* -absolute decompositions. As consequences, the result applies to several classical and non-classical Banach spaces, including sequence lattices, Lorentz and Orlicz sequence spaces, Schreier-type spaces, and suitable vector-valued sequence spaces.