Approximation by Multivariate Bernstein-Durrmeyer Operators with Arbitrary Weight Functions and Learning Rates of Least-square Regularized Regression

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In this talk, we want to establish error bounds for approximation by multivariate Bernstein-Durrmeyer operators in $L^p_{\rho_X}(1 \leq p \leq \infty)$ with respect to a general Borel measure ρ_X on a simplex $X \subset \mathbb{R}^n$. By the error bounds, we provide convergence rates of type $O(m^{-\gamma})$ with some $\gamma > 0$ for the least-square regularized regression algorithm associated with a multivariate polynomial kernel (where m is the sample size).