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George A Anastassiou* (ganastss2@gmail.com), Department of Mathematical Sciences,
University of Memphis, Memphis, TN 38152. *Bivariate Left Fractional Polynomial Monotone
Approximation.*

Let f be continuously differentiable on unit square of order (r,p) , r, p in \mathbb{N} , and let L be a linear left fractional mixed partial differential operator such that $L(f)$ is non-negative, for all (x,y) in a critical region of unit square that depends on L . Then there exists a sequence of two-dimensional polynomials $Q_{m,n}(x,y)$ with $L(Q_{m,n}(x,y))$ non-negative there, where m,n in \mathbb{N} such that $m > r, n > p$, so that f is approximated left fractionally simultaneously and uniformly by $Q_{m,n}$ on unit square. This restricted left fractional approximation is accomplished quantitatively by the use of a suitable integer partial derivatives two-dimensional first modulus of continuity. (Received June 05, 2015)