Improved Approximation Order of Surface Spline Interpolation

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ABSTRACT
The purpose of this paper is to study the $L_p$-approximation order of interpolation using a Surface Splines $\phi$ for $1 \leq p \leq \infty$. The current theories of this approach provide optimal error bounds when the approximand $f$ is in a certain reproducing kernel Hilbert space [1–3]. However, we are particularly interested in approximating to functions $f$ whose derivatives satisfy certain Lipschitz continuieties. It turns out to provide more accurate theoretical results than the currently known estimate. Some numerical results are presented.

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REFERENCES