# Interpolation of scattered data in $\mathbb{R}^{3}$ using minimum $L_{p}$-norm networks, $1<p \leq \infty$ 

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We consider the extremal problem of interpolation of scattered data in $\mathbb{R}^{3}$ by smooth curve networks with minimal $L_{p}$-norm of the second derivative for $1<p \leq \infty$. The problem for $p=2$ was set and solved by Nielson [1]. Andersson et al. [2] gave a new proof of Nielson's result by using a different approach. It allowed them to set and solve the constrained extremal problem of interpolation of convex scattered data in $\mathbb{R}^{3}$ by minimum $L_{2}$-norm networks that are convex along the edges of an associated triangulation. Partial results for the unconstrained and the constrained problems were announced without proof in [3]. Here we present complete characterization of the solutions to both the unconstrained and the constrained problems for $1<p \leq \infty$.

## References

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