

Shape Preserving Spline Approximation via Local Algorithms

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Abstract. The main goal of this paper is to construct an algorithm for shape preserving spline approximation of complex multivalued surfaces that appear in some applications. We consider firstly two different local 1-D algorithms of shape preserving interpolation and approximation. Then we use the direct product of 1-D splines and special monotonizing parametrization to obtain the surface satisfying given tolerances that inherits some shape preserving properties of 1-D splines.