

Discrete GB-Splines and Their Properties

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Abstract. Discrete generalized splines are continuous piecewise defined functions which meet some smoothness conditions for the first and second divided differences at the knots. Direct algorithms and recurrence relations are proposed for constructing discrete generalized B-splines (discrete GB-splines for short). Properties of discrete GB-splines and their series are studied. It is shown that discrete GB-splines form weak Chebyshev systems and that series of discrete GB-splines have a variation diminishing property.