On Discrete Hyperbolic Tension Splines

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A hyperbolic tension spline is defined as the solution of a differential multipoint boundary value problem. A discrete hyperbolic tension spline is obtained using the difference analogous of differential operators; its computation does not require exponential functions, even if its continuous extension is still a spline of hyperbolic type. We consider the basic computational aspects and show the main features of this approach.

Keywords: Hyperbolic tension splines, multipoint boundary value problem, discrete hyperbolic tension splines and B-splines, shape preserving interpolation.