

Title: Smoothing quadratic and cubic splines

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Abstract: The aim of this bachelor thesis is to study the topic of smoothing quadratic and cubic splines on uniform partitions. First, we define the basic concepts in the field of splines, next we introduce interpolating splines with a focus on their minimizing properties for odd degree and quadratic splines and finally smoothing odd degree and quadratic splines. We derive algorithms for the construction of smoothing cubic and quadratic splines. In the last chapter, the presented algorithms are implemented in Matlab and applied to test data. Obtained results are presented in graphic form and discussed.

Keywords: interpolation, approximation, cubic spline, quadratic spline, smoothing spline