

**Kobza, Jiří**

**On algorithms for parabolic splines.** (English) Zbl 0693.65005

Acta Univ. Palacki. Olomuc., Fac. Rerum Nat. 88, Math. 26, 169-185 (1987).

Let  $a = x_0 < x_1 < \dots < x_{n+1} = b$  be a partition of the interval  $[a, b]$ . The following problem is discussed. Given a set of real numbers  $\{g_i : 0 \leq i \leq n\}$ . Find a quadratic spline  $S_2 \in C^1[a, b]$ , with knots at  $x_0, x_1, \dots, x_{n+1}$ , such that (1)  $S_2(t_i) = g_i$  ( $0 \leq i \leq n$ ). The nodes  $t_i$  ( $0 \leq i \leq n$ ) are such that  $t_{i-1} < x_i < t_i$  ( $1 \leq i \leq n$ );  $t_0 = a$ ,  $t_n = b$ . Imposing two extra boundary conditions the author shows that there exists a unique spline  $S_2$  which satisfies the interpolatory conditions (1). An algorithm for numerical evaluation of the quadratic spline interpolant  $S_2$  is included.

Reviewer: [E. Neuman](#)

**MSC:**

[65D07](#) Numerical computation using splines

[41A15](#) Spline approximation

Cited in **6** Documents

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[parabolic splines](#); [interpolation](#); [quadratic spline](#); [algorithm](#)

**Full Text:** [EuDML](#)

**References:**

- [1] Ahlberg J. H., Nilson E. N., Walsh J. L.: The theory of splines and its applications. · [Zbl 0158.15901](#)
- [2] de Boor C.: The practical guide to splines. Springer, N.Y. 1978 · [Zbl 0406.41003](#)
- [3] Kobza J.: An algorithm for biparabolic spline. Aplikace matematiky 32 (1987), 5, 401-413. · [Zbl 0635.65006](#)
- [4] Makarov V. L., Chlobystov V. V.: Splajn approksimacija funkcij. Moskva, 1983
- [5] Schultz M. H.: Spline analysis. Prentice-Hall, N.J. 1973 · [Zbl 0333.41009](#)
- [6] Stěčkin S. B., Subbotin J. N.: Splajny v vyčislitelnoj matematike. Moskva 1976

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