Vol. 21 No. 4

## ON UNIFORM LEBESGUE CONSTANTS OF LOCAL EXPONENTIAL SPLINES WITH EQUIDISTANT KNOTS

## E. V. Strelkova, V. T Shevaldin

## Received May 15, 2015

For a linear differential operator  $\mathcal{L}_r$  of arbitrary order r with constant coefficients and real pairwise different roots of the characteristic polynomial, we study Lebesgue constants (the norms of linear operators from C to C) of local exponential splines corresponding to this operator with a uniform arrangement of knots; such splines were constructed by the authors in earlier papers. In particular, for the third-order operator  $\mathcal{L}_3 = D(D^2 - \beta^2)$  ( $\beta > 0$ ), we find the exact values of Lebesgue constants for two types of local splines and compare these values with Lebesgue constants of exponential interpolation splines.

Keywords: Lebesgue constants, exponential splines, linear differential operator.

**E. V. Strelkova** Cand. Phys.-Math. Sci., Krasovskii Institute of Mathematics and Mechanics, Ural Branch of the Russian Academy of Sciences, Yekaterinburg, 620990 Russia.

**V. T. Shevaldin** Dr. Phys.-Math. Sci., Krasovskii Institute of Mathematics and Mechanics, Ural Branch of the Russian Academy of Sciences, Yekaterinburg, 620990 Russia, e-mail: Valerii.Shevaldin@imm.uran.ru.

Cite this article as:

E. V. Strelkova, V. T Shevaldin, On uniform Lebesgue constants of local exponential splines with equidistant knots, *Tr. Inst. Mat. Mekh. UrO RAN*, 2015, vol. 21, no. 4, pp. 261–272.