ERRATA

1. In the paper: S. G. Mikhlin, "Variation-difference approximation," J. Sov. Math. 10, No. 5, 661-787 (1978), in Sec. 6 of Chap. 5, one estimate was made in not the best way and, as a result, the proof of fundamental inequality (3) for the case of degeneracy index $\alpha = 1$ turned out to be incorrect. Here we present an improved estimate and by the same token eliminate the incorrectness mentioned. The paper's text on p. 721 line 5 to line 17 needs to be replaced by the following.

From the inequalities presented above it follows that

$$\int_{x_k}^{x_{k+1}} [u'(t)]^2 dt \leq C h^{1-\frac{2}{\tau}-2\alpha} [k^{-\frac{2}{\tau}-2\alpha} \|f\|_\tau^2 + k^{-2\alpha} \{ \int_{x_k}^{x_{k+1}} |g_1(t)|^\tau dt \}^{\frac{2}{\tau}}].$$

We take the polygonal line the same as in Sec. 4. Now

$$J_k = \int_{x_k}^{x_{k+1}} x^\alpha p(x)(u'(x)-u^{h\prime}(x))^2 dx \leq (k+1)^\alpha h^\alpha p_1 \int_{x_k}^{x_{k+1}} (u'(x)-u^{h\prime}(x))^2 dx \leq 2^\alpha k^\alpha h^{2+\alpha} p_1 \int_{x_k}^{x_{k+1}} [u'(t)]^2 dt \leq C h^{3-\frac{2}{\tau}-\alpha} [k^{-\frac{2}{\tau}-\alpha} \|f\|_\tau^2 + k^{-\alpha} \{ \int_{x_k}^{x_{k+1}} |g_1(t)|^\tau dt \}^{\frac{2}{\tau}}]$$

Summing and bearing in mind that the series $\sum_{k=1}^{\infty} k^{-\frac{2}{\tau}-\alpha}$ converges, we obtain

$$J - J_0 = \sum_{k=1}^{2n-1} J_k \leq C h^{3-\frac{2}{\tau}-\alpha} [\|f\|_\tau^2 + \sum_{k=1}^{2n-1} k^{-\alpha} \{ \int_{x_k}^{x_{k+1}} |g_1(t)|^\tau dt \}^{\frac{2}{\tau}} .$$

We estimate the last sum by Hölder's inequality with indices $\frac{\tau}{\tau-2}$ and $\frac{\tau}{2}$:

$$\sum_{k=1}^{2n-1} k^{-\alpha} \{ \int_{x_k}^{x_{k+1}} |g_1(t)|^\tau dt \}^{\frac{2}{\tau}} \leq \{ \sum_{k=1}^{2n-1} k^{-\frac{\alpha\tau}{\tau-2}} \}^{\frac{\tau-2}{\tau}} \{ \int_h^1 |g_1(t)|^\tau dt \}^{\frac{2}{\tau}} .$$

Since $\tau > 2$ and $\alpha \geq 1$, the series $\sum_{k=1}^{\infty} k^{-\frac{\alpha\tau}{\tau-2}}$ converges and the quantity on the right has the estimate $C\|g_1\|_\tau^2 \leq C\|f\|_\tau$. Finally,

$$J - J_0 \leq C h^{3-\frac{2}{\tau}-\alpha} \|f\|_\tau^2 .$$

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2. In the paper: T. Ya. Kon'kova, "ALGOL procedure for solving certain problems of algebra, based on the application of a normalized process," J. Sov. Math., 7, No. 1, 24-28 (1977), the procedure iseigv (pp. 26-27) contains errors. We present a corrected text.