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 $d = 1$ 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

$$\int_{x_k}^{x_{k+1}} [u'(t)]^2 dt \leq Ch^{1-\frac{2}{v}-2d} [k^{-\frac{2}{v}-2d} \|f\|_v^2 + k^{-2d} \left\{ \int_{x_k}^{x_{k+1}} |g_1(t)|^v dt \right\}^{\frac{2}{v}}].$$

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

$$J_k = \int_{x_k}^{x_{k+1}} x^d p(x) (u'(x) - u^h(x))^2 dx \leq (k+1)^d h^d \rho_1 \int_{x_k}^{x_{k+1}} (u'(x) - u^h(x))^2 dx \leq 2^d k^d h^{2d} \rho_1 \int_{x_k}^{x_{k+1}} [u'(t)]^2 dt \leq Ch^{3-\frac{2}{v}-d} [k^{-\frac{2}{v}-d} \|f\|_v^2 + k^{-2d} \left\{ \int_{x_k}^{x_{k+1}} |g_1(t)|^v dt \right\}^{\frac{2}{v}}].$$

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

$$J - J_0 = \sum_{k=1}^{2n-1} J_k \leq Ch^{3-\frac{2}{v}-d} [\|f\|_v^2 + \sum_{k=1}^{2n-1} k^{-2d} \left\{ \int_{x_k}^{x_{k+1}} |g_1(t)|^v dt \right\}^{\frac{2}{v}}].$$

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

$$\sum_{k=1}^{2n-1} k^{-2d} \left\{ \int_{x_k}^{x_{k+1}} |g_1(t)|^v dt \right\}^{\frac{2}{v}} \leq \left\{ \sum_{k=1}^{2n-1} k^{-\frac{dv}{v-2}} \right\}^{\frac{v-2}{v}} \left\{ \int_0^1 |g_1(t)|^v dt \right\}^{\frac{2}{v}}.$$

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

$$J - J_0 \leq Ch^{3-\frac{2}{v}-d} \|f\|_v^2.$$

S. G. Mikhlin

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 isevg (pp. 26-27) contains errors. We present a corrected text.

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procedure iseigv (a,n,t,eps,
lambda);
value n; integer n,t;
array a; real eps,lambda;
begin real d,c,s,l;
array b,q[1:n,1:n];
integer array r[1:n];
integer i,j,k,t1;
m:for i:=1 step 1 until n do
begin
for j:=1 step 1 until n do
begin if i=j then
begin b[i,j]:=a[i,j]-lambda;
q[i,j]:=1 end
else begin b[i,j]:=a[i,j];
q[i,j]:=0 end
end end;
for i:=1 step 1 until n do
for k:=1 step 1 until n do
begin l:=b[k,i]; d:=b[k,j];
b[k,i]:=l*c+d*s;
b[k,j]:=l*s+d*c end;
for k:=1 step 1 until n do
begin d:=q[k,i]; l:=q[k,j];
q[k,i]:=d*c+l*s;
q[k,j]:=d*s+l*c end
end k end j end i;
d:=b[i,i]; t1:=0;
for i:=n step -1 until 1 do
if abs (b[i,i]/d)<eps
then t1:=t1+1;
if t1≠0 then go to out;
for i:=1 step 1 until n do
b[i,i]:=q[i,n];
begin l:=0; r[i]:=0;
for j:=1 step 1 until n do
begin d:=0;
for k:=1 step 1 until n do
d:=d+b[j,k]2;
if d>1 then
begin r[i]:=j; l:=d end end;
if r[i]≠1 then begin
for k:=1 step 1 until n do
begin d:=b[i,k];
b[i,k]:=b[r[i],k];
b[r[i],k]:=d end end;
for j:=i+1 step 1 until n do
begin
if abs (b[i,j])>eps
then begin
c:=sqrt(b[i,i]2+b[i,j]2);
s:=b[i,j]/c; c:=b[i,i]/c;
for i:=1 step 1 until n do
begin l:=b[i,i];
b[i,i]:=b[i,r[i]];
b[i,r[i]]:=l end;
b[i,1]:=b[i,1]/d;
for i:=2 step 1 until n do
begin l:=0;
for j:=1 step 1 until i-1 do
l:=l+b[i,j]*b[i,j];
b[i,i]:=b[i,i]-l/b[i,i] end i;
l:=lambda+1/b[i,n];
if abs (1/b[i,n]*l)>eps then
begin lambda:=l; go to m end; t:=1;
out:for i:=1 step 1 until t do
for j:=1 step 1 until n do
a[i,j]:=q[j,n-i+1]; t:=t1 end;

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The following changes should be made in the procedure normlesq: on p. 25: between lines 14 and 15 from the bottom should be inserted the line:

for j:=k step 1 until n do .

Between lines 6 and 7 from the bottom should be inserted the line:

if n=2 then begin r[1]:=n; go to z end;

T. Ya. Kon'kova