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Erratum to "Interpolation by elliptic functions"

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Abstract

Some errors should be corrected in the paper: Szabados J. (2009), Interpolation by elliptic functions, Jaen J. Approx. 1(1), 55–65.

Keywords: Elliptic functions, interpolation.

MSC: Primary 33E05, 30E05; Secondary 41A05.

The following errors should be corrected in the paper [2]:

(1) While the origin of results in Sections 2 and 3 was documented, I regret to say that the results in Sections 4 to 6 were not. They are due to G. Halász [1] (Section 4) and the author (Sections 5 and 6).

(2) When looking for the solution of the Lagrange, Hermite or Hermite–Fejér interpolation problem, it should have been emphasized that the nonexistence of interpolation of the required degree is meant in the sense that an operator as a linear combination of fundamental functions does not exist. If we do not prescribe this form, then such linear operators exist (see [1]).

(3) In the proof of nonexistence of Lagrange interpolation at the beginning of Section 4, instead of the sum of two fundamental functions, a suitable linear combination of these functions should have been taken such that the poles do not cancel.

(4) In the proof of Theorem 5.1, instead of (5.5)-(5.6), we should have

$$Nu_n \not\equiv \sum_{\substack{s=1\\ s\neq k}}^{n} m_s z_s + j z_k + (m_k - j) z_\ell \pmod{\Omega}, \qquad \ell = 1, \dots, n \tag{5.5}$$

and

$$(N - m_k + j) u_n \not\equiv \sum_{\substack{s=1\\ s\neq k}}^{n} m_s z_s + j z_k \pmod{\Omega} \tag{5.6}$$

for all $0 \le j \le m_k - 1$ and $1 \le k \le n$. Such a u_n exists, since congruences of the form $nx \equiv a \pmod{\Omega}$ (n is an integer) have only finitely many incongruent solutions in x. The rest of the proof is unchanged.

(5) The "end of proof" sign at the bottom of p. 63 should be moved to the end of Section 6.

Thanks are due to Gábor Halász for calling my attention to the errors (1) to (4).

References

[1] Halász G. (2007)
Special Functions, Complex Function Theory VI, Graduate Texts, Typotex, Budapest (in Hungarian).

[2] Szabados J. (2009)
Interpolation by elliptic functions, Jaen J. Approx. 1(1), 55–65.

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