CORRECTION TO THE PAPER "THE REFLECTION PRINCIPLE FOR POLYHARMONIC FUNCTIONS"

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Dr. Avner Friedman kindly drew our attention to an error in *The reflection principle for polyharmonic function* (this Journal 5 (1955), 433–439). On p. 436 we stated that the operator (2.1) transforms $x_1^{\nu_1}x_2^{\nu_2}\cdots x_n^{\nu_n}$ into $(-1)^{\nu_1}x_1^{\nu_1}x_2^{\nu_2}\cdots x_n^{\nu_n}$ for $p\leqq\nu_1\leqq 2p-1$. Counterexamples show that this is not generally true. In our proof we had overlooked the fact that the formula on p. 437 does not represent σ if $2k^*>2p-1-\nu_1$.

Correction. The statement is valid under the additional hypothesis that $\nu_1+\nu_2+\cdots+\nu_n\leqq 2p-1$. Indeed, then a direct verification yields $\sigma=0$ in the case $2k^*>2p-1-\nu_1$.

In order to close the gap which now appears in the proof of the theorem we first observe that the operator (2.1) transforms $x_1^{\nu_1}x_2^{\nu_2}\cdots x_n^{\nu_n}$ into a sum of terms of degree $\nu_1+\nu_2+\cdots+\nu_n$. From this and the above assertion we infer that (3.8) is true if

$$\text{(A)}\qquad p\leqq\nu_1\leqq 2p-1 \qquad\text{and}\qquad \nu_1+\nu_2+\cdots+\nu_n\leqq 2p-1\,.$$

Hence, under the same assumptions,

$$\text{(B)}\qquad \frac{\partial^{\nu_1+\nu_2+\cdots+\nu_n}w(-x_1, x_2, \cdots, x_n)}{\partial x_1^{\nu_1}\partial x_2^{\nu_2}\cdots\partial x_n^{\nu_n}}=\frac{\partial^{\nu_1+\nu_2+\cdots+\nu_n}v(x_1, x_2, \cdots, x_n)}{\partial x_1^{\nu_1}\partial x_2^{\nu_2}\cdots\partial x_n^{\nu_n}},$$

everywhere on S. We conclude that (B) and (3.8) remain valid if the second condition (A) is dropped. Now we can follow the previous reasoning.

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