

# Pacific Journal of Mathematics

**CORRECTION TO: "THE REFLECTION PRINCIPLE FOR  
POLYHARMONIC FUNCTIONS"**

ALFRED HUBER

# 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  $p \leq \nu_1 \leq 2p-1$ . 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  $\sigma$  if  $2k^* > 2p-1-\nu_1$ .

*Correction.* The statement is valid under the additional hypothesis that  $\nu_1 + \nu_2 + \cdots + \nu_n \leq 2p-1$ . 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

$$(A) \quad p \leq \nu_1 \leq 2p-1 \quad \text{and} \quad \nu_1 + \nu_2 + \cdots + \nu_n \leq 2p-1 .$$

Hence, under the same assumptions,

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

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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