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CORRECTION TO: THE SPECTRAL GEOMETRY OF THE HIGHER ORDER LAPLACIAN, VOL. 47 (1980), 511–528.

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Professors S. M. Christensen and S. A. Fulling have communicated to me the following example which demonstrates that Lemma 1.1 of this paper is false. Let f be a symmetric 2-tensor and define:

$$(Pf)_{ab} = f_{ab;ccdd} + c_1 R_{dede} f_{ab;cc} + c_2 R_{eced} f_{ab;cd}$$

$$+ c_3 R_{acde} f_{db;ce} + c_4 R_{acbd} f_{cd;ee}.$$

The terms with coefficients c_3 and c_4 are not adequately described by the lemma. The correct version of Lemma 1.1 should read:

LEMMA 1.1. *Let P be natural and homogeneous of order $u = 2v > 0$ with leading symbol given by the metric tensor. We regard $R_{abcd}(\underline{\Delta}^{v-2}f)_{;ef}$ as an element of $\otimes^6 T^*M \otimes V$. There exists a linear map $E: \otimes^6 T^*M \otimes V \to V$ which is natural and which does not involve derivatives of the metric, and there exists a natural operator Q of order at most $u - 3$ such that:*

$$Pf = \underline{\Delta}^v(f) + E\left(R_{abcd}(\underline{\Delta}^{v-2}f)_{;ef}\right) + Q(f).$$

In particular, $P(G)$ is in our class of operators.

The conclusion that $P(G)$ is in our class of operators remains unchanged; our mistake was in asserting a particular form for such operators. Lemma 1.1 is true in the scalar case, but false as stated originally in general. If V is $\otimes^k T^*M$, for example, then a basis for the set of all such E is given by contracting 6 indices in 3 pairs by H. Weyl's theorem on the invariants of the unitary group. More generally, it is possible to specify the admissible E once V is given; the example given by Christensen and Fulling is the most general possible 4th order operator of this form on symmetric 2-tensors modulo first order operators.

This lemma was only used in the scalar case where it was correct as stated and therefore no additional changes need to be made to the paper. We regret the error and are grateful to Christensen and Fulling for pointing it out.

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