Commun. Math. Phys. 248, 639 (2004)
Digital Object Identifier (DOI) 10.1007/s00220-004-1109-4

Communications in
Mathematical Physics

Erratum

A New Short Proof of the Local Index Formula and Some of Its Applications

Raphaël Ponge

Department of Mathematics, Ohio State University, Columbus, OH 43210-1174, USA.
E-mail: ponge@math.ohio-state.edu

Received: 19 January 2004 / Accepted: 18 March 2004
Erratum published online: 18 June 2004 – © Springer-Verlag 2004

Commun. Math. Phys. **241**, 215–234 (2003)

Unfortunately several misprints have appeared in the article *A new short proof of the local index formula and some of its applications*. We give a list of corrections:

- Page 216: In the line between the equations (1) and (2) the reader should read "$C^0(\mathbb{R}, L^2(M, \mathcal{E})) \subset \mathcal{D}'(M \times \mathbb{R}, \mathcal{E})$" instead of "$C^0(\mathbb{R}, L^2(M, \mathcal{E})) \subset \mathcal{D}(M \times \mathbb{R}, \mathcal{E})$".
- Page 218: In Proposition 1 the 5^{th} line should be removed.
- Page 219: Equation (10) in Theorem 2 should read

$$k_t(x, x) \sim_{t \to 0^+} t^{\frac{-n}{2}} \sum_{l \geq 0} t^l a_l(\Delta)(x), \quad a_l(\Delta)(x) = \check{q}_{-2-2l}(x, 0, 1).$$

  Furthermore, in Proposition 2 the following changes need to be made:

  i. In the first sentence: "For $t > 0$ we let $h_t(x, y)$ denote the distribution kernel of $Pe^{-t\Delta}$" (not "of P"):

  ii. Equation (12), and the text which follows should read:

$$h_t(x, x) \sim_{t \to 0^+} t^{[\frac{m}{2}]-\frac{n}{2}} \sum_{l \geq 0} t^l b_l(x), \quad b_l(x) = \check{r}_{2[\frac{m}{2}]-2-2l}(x, 0, 1),$$

  where the equality on the right-hand side gives a formula for computing the densities $b_l(x)$'s in local trivializing coordinates using the symbol $q \sim \sum q_{m-2-j}$ of $P(\Delta + \partial_t)^{-1}$ (or of PQ where Q is any Volterra parametrix for $\Delta + \partial_t$).
- Page 234: The correct reference for Richard Melrose's book is:

References

[Me] Melrose, R.: *The Atiyah-Patodi-Singer index theorem*. Boston: A.K. Peters, 1993

Communicated by M. Aizenman