Corrigendum

Corrigendum to “Fredholm operators, semigroups and the asymptotic and boundary behavior of solutions of PDEs”

Patrick J. Rabier *

Department of Mathematics, University of Pittsburgh, 301 Thackeray Hall, Pittsburgh, PA 15260, USA
Available online 30 March 2007

Part of the proof of Theorem 3.1 is based on the claim that for every multi-index \( \alpha \), \( \partial^\alpha e^\psi = e^\psi P_\alpha(D\psi, \ldots, D^{\left|\alpha\right|}\psi) \), where \( P_\alpha \) is a homogeneous polynomial of degree \( \left|\alpha\right| \) independent of \( \psi \). Obviously, “homogeneous” is incorrect. The correct relevant property is that \( P_\alpha \) has no constant term, i.e., \( P_\alpha(0, \ldots, 0) = 0 \), when \( \left|\alpha\right| \geq 1 \) (because \( P_\alpha(0, \ldots, 0) = \partial^\alpha 1 = 0 \)) while \( P_0 = 1 \). When \( \psi = -s\rho \), this implies that

\[
\partial^\beta \left( e^{-sp} u \right) - e^{-sp} \partial^\beta u = e^{-sp} \sum_{0 < \alpha \leq \beta} \binom{\beta}{\alpha} P_\alpha(-s D\rho, \ldots, -s D^{\left|\alpha\right|}\rho) \partial^{\beta - \alpha} u
\]

\[
= s e^{-sp} \sum_{0 < \alpha \leq \beta} \binom{\beta}{\alpha} Q_\alpha(s, D\rho, \ldots, D^{\left|\alpha\right|}\rho) \partial^{\beta - \alpha} u,
\]

where each \( Q_\alpha \) is a polynomial in all the variables, including \( s \). This should replace formula (11) and suffices for the validity of all subsequent inequalities and arguments.

DOI of original article: 10.1016/S0022-0396(03)00094-9.

* Fax: +1 412 624 8397.

E-mail address: rabier@imap.pitt.edu.