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Correction to "Estimates and solvability"

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The original article appeared in *Arkiv för matematik* **37** (1999), 221–243.

In the final typesetting, the end of the proof of Theorem 2.4 disappeared. Thus, the following lines should be inserted before Remark 6.3 on p. 242.

End of the proof of Theorem 2.4. Thus, by Lemma 6.2 we find that $(\operatorname{Re} a)^w \geq c_0^w$ almost everywhere for some uniformly bounded and real $c_0 \in L^\infty(\mathbf{R}, S(h^2, g))$. Put $A = a_0^w = (a - c_0)^w$, this only adds $ic_0^w b^w \in \operatorname{Op} S(h, g)$ to R_0, then we obtain that $\operatorname{Re} A \geq 0$. When $\operatorname{Re} a \geq c > 0$, we may replace a with $a - c$ and do the same construction to obtain $\operatorname{Re} A = \operatorname{Re}(a - c_0)^w \geq c$. This gives the preparation (6.11) of P in the case when $\operatorname{Im} r + \frac{1}{2}\{\operatorname{Im} a, b\} \in S(h, g)$.

In the general case, we conjugate with E^w, where

$$E = \exp\biggl(-\int_0^t \operatorname{Im}\bigl(r + \tfrac{1}{2}\{a, b\}\bigr)\, ds\biggr) \in S(1, g) \tag{6.21}$$

is real valued. We find $E^{-1} \in S(1, g)$ and $E^w (E^{-1})^w \cong (E^{-1})^w E^w \cong 1$ modulo an operator in $\operatorname{Op} S(h^2, g)$ with L^2 operator norm bounded by $C_0 T$ when $|t| \leq T$. In fact, we find $(E-1)/T \in S(1, g)$ uniformly when $|t| \leq T \leq C$. Thus, E^w is invertible for small enough T, with an L^2 bounded inverse. We find that

$$(D_t + if^w + r_0^w) E^w \cong E^w P$$

modulo $\operatorname{Op} S(h, g)$, where

$$r_0 = \operatorname{Re} r - \tfrac{1}{2} i \{\operatorname{Im} a, b\} - \{f, E\} E^{-1} \in S(1, g)$$

satisfies the condition that

$$\operatorname{Im}\bigl(r_0 + \tfrac{1}{2}\{a, b\}\bigr) \equiv 0.$$

Since $E^w B E^w \cong (bE^2)^w$ modulo L^2 bounded operators, we obtain the result with $b_0 = bE^2 \in S(h^{-1}, g)$ by applying the estimate (6.17) on $E^w u$ for small enough T, with $P = D_t + if^w + r_0^w$. This completes the proof of Theorem 2.4. $\square$

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