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# Addendum "Complex transformation method and resonances in one-body quantum systems"

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# ADDENDUM

## « Complex transformation method and resonances in one-body quantum systems »

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(1) Condition (3.8) must be replaced by the following condition

$$|f(\zeta)| < C|\zeta|(1 + \|\operatorname{Re}\zeta\|)^{-\alpha} \qquad \text{for some} \quad \alpha > 1 \qquad (*)$$

This change does not effect the estimates. Indeed, the inequality (9.8) as it stands was used only in the proof of the statement Image $\varphi_{iy} \in \Lambda_{\delta,\alpha}$ (which is not used in the paper anyway) from lemma 3.3. In the proof of the other statements of this lemma we used only that $|f(\zeta)| < C|\zeta|$. To prove that Image $\varphi_{iy} \in \Lambda_{\delta,\alpha}$ using (*), one must apply the inequality

$$\sup_{0 \leqslant s \leqslant y} |\varphi_{is}(p)| \leqslant 3 \|\operatorname{Re}\varphi_{iy}(p)\| \qquad (**)$$

(instead of

$$\sup_{0 \leqslant s \leqslant y} \|\operatorname{Re}\varphi_{is}(p)\| \leqslant 3 \|\operatorname{Re}\varphi_{iy}(p)\|.)$$

(**) follows from eqn (3.13) and the estimate standing after (3.14).

The author is grateful to H. Cycon for pointing out that the condition (3.8) for a function $f$ analytic in the tube (3.7) implies $f \equiv 0$. On the other hand, $f(\zeta) = \zeta(1 + \|\zeta\|^2)^{-1}$ obeys the new condition (*).

(2) Independently, the generator $D_f$ was introduced and applied to studying the Schrödinger operators in H. Cycon and P. Perry, Local time-decay of high energy scattering states for the Schrödinger equation, Preprint, Technische Universität Berlin. The author is grateful to H. Cycon for pointing this out to him.