

Addendum to « Some Remarks on the Origin of the Deviations from the Exponential Decay Law of an Unstable Particle ».

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Prof. B. SIMON has kindly pointed out to us that the proof given in our paper, according to which the equation $f(t, t') \equiv P_V \exp[-iHt'] P_\perp \exp[-iHt] P_V = 0$ for $t, t' > 0$ implies $P_\perp H P_V = 0$, is not correct. In fact, as we have *not used* the fact that the spectrum of H is bounded from below, it is possible to find a counter-example for which the proof fails. As pointed out by SIMON, when the boundedness condition is taken into account, our claim can be rigorously proved as follows:

Since H is bounded from below, $\exp[-iHt]$ is the boundary value of an operator analytic function. Therefore, simply by analytic continuation from $f(t, t')$ for $t, t' > 0$, there follows $f(t, -t) = (P_\perp \exp[-iHt] P_V)^\dagger (P_\perp \exp[-iHt] P_V) = 0$ and consequently $P_\perp \exp[-iHt] P_V = 0$ for $t > 0$, which was our claim. Therefore all conclusions of our paper remain valid.

We thank Prof. B. SIMON for his remark.