PROCEEDINGS OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 111, Number 4, April 1991

CORRECTION TO "MEASURABLE HOMOMORPHISMS OF LOCALLY COMPACT GROUPS" **106** (1989), 391–395

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(Communicated by Jonathan M. Rosenberg)

There is a gap in the proof of Theorem 2, pointed out to me by Dominik Noll. The assertion that $\pi(x) = \pi_*(x)$ *lae* is unjustified. Although it is true that for each u and $v \in L^2(H)$, $\langle \pi(x)u, v\rangle = \langle \pi_*(x)u, v\rangle$, *lae*, the exceptional locally null set depends a priori on u and v.

To remedy this, the conclusion of Theorem 2 should be replaced by the following. This is sufficient for the proof of Theorem 1.

Then there is a continuous homomorphism $\varphi_*: G \to H$ and for each open σ-compact subgroup $G_1 \subset G$ an open σ-compact subgroup $H_1 \subset H$ together with a filtered decreasing family $\{S_\alpha\}$ of closed normal subgroups of H_1 such that

(1) $H_1 = \varprojlim H_1/S_\alpha$,

(2) *for each α, $q_\alpha\varphi(x) = q_\alpha\varphi_*(x)$, for almost all $x \in G_1$, where $q_\alpha: H_1 \to H_1/S_\alpha$ is the canonical map. If φ is a homomorphism, $\varphi = \varphi_*$.*

To prove this we construct φ_* as before. $\varphi_*(G_1)$ is contained in some σ-compact open subgroup $H_1 \subset H$. For each separable subset $E \subset L^2(H)$, $\lambda(H_1)E$ is also a separable set. Let $\{E_\alpha\}$ be the family of all closed separable subspaces of $L^2(H)$ invariant under $\lambda(H_1)$. Each E_α is invariant under $\pi_*(G_1)$ and $\{E_\alpha\}$ is a filtered increasing family whose union is $L^2(H)$. Put $S_\alpha = \{y \in H_1 \mid \lambda(y)|_{E_\alpha} = 1\}$. In view of the definition of the strong operator topology on the unitary group of E_α and the bicontinuity of λ we see that $H_1 = \varprojlim H_1/S_\alpha$. Because each E_α is separable and invariant under $\pi_*(G_1)$, $\pi_*(x)|_{E_\alpha} = \pi(x)|_{E_\alpha}$, for almost all $x \in G_1$. This leads to the equation $q_\alpha\varphi_*(x) = q_\alpha\varphi(x)$, for almost all $x \in G_1$. If φ is a homomorphism, then $q_\alpha\varphi_*$ and $q_\alpha\varphi$ agree on a conull subgroup of G_1, which is all of G_1. Since this is true for each α, $\varphi_*(x) = \varphi(x)$, for all $x \in G_1$. Because G_1 is arbitrary, $\varphi_* = \varphi$.

Zoltán Sasvári has also given an alternate proof of Theorem 1 [Proc. Amer. Math. Soc., to appear].

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Received by the editors March 26, 1990.
1980 *Mathematics Subject Classification* (1985 *Revision*). Primary 22D05.