MATHEMATICS

# CORRECTIONS TO "NOT LOCALLY COMPACT MONOTHETIC GROUPS"

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In section 9 there appears a mistake.

Namely, by choosing $m$ on $S$, defined by

$$m(\{x_i\}) = \sum_{i=1}^{\infty} |x_i| + |\sum_{i=0}^{\infty} x_i|$$

we see, that the coordinate functions on $S$ may not be continuous, with respect to $m$. So $m$ should also satisfy, that $S_n$ is closed with respect to $m$. Then lemma 83 becomes completely trivial.

Furthermore, in 34, $P_j$ is not defined for elements of $G_\pi$ or $G_\vartheta$, that are not in $\mathbf{Z}^+$. However, $P_j$ can be continuously extended to $G_\pi$ or $G_\vartheta$, in view of the remarks following 24.

Then, the proof of 71. is extremely unclear. So we elucidate that proof here.

Apparently, when a Cauchy net converges coordinate wise to

$$z = \sum_{i=0}^{\infty} a_i(i+1)! \qquad \text{(positive reduced)}$$

in $G_\vartheta = \lim\text{proj}\ \mathbf{Z}/(n!)$, there are three possibilities.

(a) From certain index $i_0$ on, $a_i = i+1$, or, from a certain index $i_0$ on, $a_i = 0$, so $z \in \mathbf{Z}$.

(b) From a certain index $i_0$ on, $a_i = 0$ or $a_i = i+1$ for all $i$, but these possibilities keep alternating infinitely often.

(c) For infinitely many $i$, $0 < a_i < i+1$.

We have to exclude (b) and (c).

Case (c) is easy. Let $B = \{i \in \mathbf{N} | 0 < a_i < i+1\}$, then $i \in B$ implies, there is a contribution $p_i$ to the norm of $z$, whatever $\varrho$ is chosen. $B$ is infinite, so there exists $A \in \mathscr{F}$ with $A \subset B$; For case (b), let us call $i$ a *switching place* if $a_i = 0$ and $a_{i-1} = i$. It is then proved that a switching place $i$ also contributes $p_i$, whatever $\varrho$ is. In case (b) there is obviously an infinite set $B$ of switching places, so we can proceed as in (c).