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ERRATUM TO: "COVERS OF GROUPS DEFINABLE IN O-MINIMAL STRUCTURES" [ILLINOIS J. MATH. 49 (2005), 99–120]

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Abstract. In this short note we point out two errors in our paper "Covers of groups definable in o-minimal structures" [Illinois J. Math. 49 (2005), 99–120], and we show how to correct these errors.

There are errors in the statements of Corollary 3.13 and Theorem 4.8 from [1]. Corollary 3.13 there should say that if G is a definably connected locally definable group, then $\pi(G)$ is the inverse limit of the inverse system

$$\{\theta_H^K : \mathrm{Aut}(K/G) \to \mathrm{Aut}(H/G) \mid K \to H \in \mathrm{MorCov}^0(G)\}$$

of groups. Indeed, $\pi(G)$ is by definition $\mathrm{Ker}\,\tilde{p}$; the later group is the inverse limit of the inverse system of subgroups $\mathrm{Ker}\,h$ for $h : H \to G \in \mathrm{Cov}^0(G)$, and Proposition 3.4 in [1] gives an isomorphism of the two inverse systems.

As for Theorem 4.8 in [1], the proof only shows that if G is a definably connected locally definable group in an o-minimal expansion of a field, then there exists a homomorphism

$$\Psi : \pi_1(G) \to \pi(G)$$

(the inverse limit of the homomorphisms $\pi_1(G) \to \mathrm{Aut}(H/G)$ for $H \to G \in \mathrm{Cov}^0(G)$) whose kernel is $\cap\{h_*(\pi(H)) \mid h : H \to G \in \mathrm{Cov}^0(G)\}$.

What is claimed in Theorem 4.8 is, however, true. In fact, we have the following more general result:

Theorem ([2]). *Let $\mathcal{R}$ be an o-minimal expansion of a group and G a definably connected definable group. Then the o-minimal universal covering homomorphism $\tilde{p} : \tilde{G} \to G$ is a locally definable covering homomorphism and $\pi_1(G)$ is isomorphic to $\pi(G)$.*

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References

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