CORRIGENDUM TO: ON THE LENGTH OF ARITHMETIC PROGRESSIONS IN LINEAR COMBINATIONS OF S-UNITS

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Abstract. In the paper "On the length of arithmetic progressions in linear combinations of S-units" (Arch. Math. 94 (2010), 357–363), Lemma 2.1 contains an error. This error also affects the final bound appearing in Theorem 1.1. In this corrigendum we give these statements in correct forms.

Corrigendum to: Arch. Math. 94 (2010), 357–363
DOI 10.1007/s00013-010-0111-7

In formulating Lemma 2.1 in [2], a result of Amoroso and Viada [1] is interpreted in a wrong way. We are grateful to Kálmán Győry for calling our attention to this error. The correct formulation of the lemma is the following.

Lemma 2.1. *Equation (2.1) has at most* $C(k,r) := (8k)^{4k^4(k+r^k+1)}$ *nondegenerate solutions* $(x_1,\dots,x_k)\in\Gamma^k$.

Proof. Since the rank of Γ^k is at most r^k, this is an immediate consequence of Theorem 6.2 in [1], indeed. □

Unfortunately, this error affects the bound in Theorem 1.1 in [2]. Now we give a correct formulation of this result, and indicate the main changes in the proof (which are only technical ones).

Theorem 1.1. *We have*

$$L < \exp\left((8(n+t+r))^{8(2r+2)^{2t+2}}\right).$$

Proof. The change in Lemma 2.1 implies simple automatic changes in the proof. These lead to the correct form of (2.4), given by

$$|\mathcal{I}| < n^t 2^{t+1}(8(t+1))^{4(t+1)^4(t+(r+s)^{t+1}+2)}.$$

Date: 30 July, 2014.
1991 *Mathematics Subject Classification.* Primary 11B25; Secondary 11D61.
Key words and phrases. Arithmetic progressions, finitely generated groups, S-unit equations, subspace theorem.

Then, at the end of the proof making the choice $s = r+2$, the statement follows by a simple calculation. □

References

[1] F. Amoroso and E. Viada, *Small points on subvarieties of a torus.* Duke Math. J. **150** (2009), 407–442.

[2] L. Hajdu and F. Luca, *On the length of arithmetic progressions in linear combinations of S-units.* Arch. Math. **94** (2010), 357–363.

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