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Corrigendum

Corrigendum to “On the quantitative dynamical Mordell–Lang conjecture” [J. Number Theory 156 (2015) 161–182]

Alina Ostafe, Min Sha *

School of Mathematics and Statistics, University of New South Wales, Sydney, NSW 2052, Australia

A R T I C L E   I N F O

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A B S T R A C T

An error in Corollary 2.7 of Ostafe and Sha (2015) [1] is corrected, which also triggers several changes in some of the main results of the paper.

The authors regret an error in [1, Corollary 2.7], where the notion of proportionality in this result is not properly defined. The bound and proof of [1, Corollary 2.7] remain unchanged.

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* Corresponding author.
E-mail addresses: alina.ostafe@unsw.edu.au (A. Ostafe), shamin2010@gmail.com (M. Sha).

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In fact, up to a factor of proportionality, the linear equation

$$a_1x_1 + \cdots + a_kx_k = 0,$$

may have infinitely many solutions in the group Γ. For example, given any odd integer $n > 0$, the vector $(2^n, -2^n, 1, -1)$ is a solution of the equation $x_1 + x_2 + x_3 + x_4 = 0$, and any two of these solutions are not up to a factor of proportionality.

We correct this error below and also indicate the changes that this definition brings to other results. Before listing the exact corrections on the results of [1] we introduce the following definitions.

Let $a_1, \ldots, a_k \in \mathbb{C}^*$ and consider the equation

$$a_1x_1 + \cdots + a_kx_k = 0. \tag{1}$$

Let $\mathcal{P}$ be a partition of the set $I = \{1, \ldots, k\}$. The subsets $\lambda \subseteq I$ occurring in the partition $\mathcal{P}$ are considered as elements of $\mathcal{P}$. Then, the system of equations

$$\sum_{i\in\lambda} a_ix_i = 0 \quad (\lambda \in \mathcal{P}) \tag{2.4 $\mathcal{P}$}$$

is a refinement of (1). Given a partition $\mathcal{P}$ of the set I, we say that two solutions $(x_1, \ldots, x_k)$ and $(y_1, \ldots, y_k)$ of (1) are equivalent *up to proportionality with respect to* $\mathcal{P}$ if both of them are also solutions of the system (2.4 $\mathcal{P}$), and for each $\lambda \in \mathcal{P}$ the two solutions $(x_i)_{i\in\lambda}$ and $(y_i)_{i\in\lambda}$ of the corresponding equation are equivalent up to a factor of proportionality in the usual sense.

Finally, two solutions $(x_1, \ldots, x_k)$ and $(y_1, \ldots, y_k)$ of (1) are called equivalent *up to weak proportionality* if there exists a partition $\mathcal{P}$ of the set I such that they are equivalent up to proportionality with respect to $\mathcal{P}$.

We present now the following corrections. In fact, all these corrections are explicit in the arXiv version of the paper [1].

[1, Corollary 2.7]

Statement of [1, Corollary 2.7]**.** “Up to a factor of proportionality” should be changed to “up to weak proportionality” as defined above.

Proof of [1, Corollary 2.7]**.** On page 170, line 4: it should be changed to “Let $\mathcal{T}(\mathcal{P})$ consist of solutions of (2.4 $\mathcal{P}$) in Γ up to proportionality with respect to $\mathcal{P}, \ldots$”.

On page 170, line 5: “up to a factor of proportionality” should be changed to “up to weak proportionality”.

We also take the opportunity to mention that the constant 0.792 in the bound of Corollary 2.7 (also of Lemma 2.8 and thus of Theorems 3.3–3.8) can be improved to 0.5 as in line 3 of the proof, for $k \geq 4$ we have $0.792/\log(k+1) \leq 0.792/\log 5 < 0.5$, and for