



## Corrigendum: “Consecutive Large Gaps in Sequences Defined by Multiplicative Constraints”

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We correct a misprint on page 175 of [1] about the asymptotic size of  $\Phi(M)$  as  $M \rightarrow \infty$ , assuming the Lang–Trotter conjecture. Using this mistake Wu [2], in his review of [1], gave a careful derivation of how this contradicts the statement of Theorem 3 in the paper. Let us assume the notation used in [1]. By the Lang–Trotter conjecture we know that  $\pi_0(x) \sim C_E \frac{\sqrt{x}}{\log x}$  for some positive constant  $C_E$  depending only on  $E$ . Consequently we see that if  $p_j$  is the  $j$ -th prime in  $B_f$ , then

$$p_j \sim \frac{4}{C_E^2} j^2 \log^2 j.$$

Taking logarithms it suffices to determine the asymptotic behavior of  $\Phi(M)$  from the equation

$$\sum_{j=\pi(\Phi(M))+1}^{\pi(\Phi(M))+2\Phi(M)} \log p_j = \frac{\eta}{2} \log M.$$

By partial summation we see that  $\sum_{p \leq x, p \in B_f} \log p \sim C_E \sqrt{x}$ . Combining these facts and using  $\pi(\Phi(M)) = o(\Phi(M))$ , we see that

$$\sum_{j=\pi(\Phi(M))+1}^{\pi(\Phi(M))+2\Phi(M)} \log p_j \sim C_E \sqrt{p_{\pi(\Phi(M))+2\Phi(M)}} \sim 4\Phi(M) \log \Phi(M) \sim \frac{\eta}{2} \log M.$$

Therefore the corrected form of the asymptotic size of  $\Phi(M)$  is found to be

$$\Phi(M) \sim \frac{\eta \log M}{8 \log \log M},$$

which is independent of the elliptic curve  $E$ . This correction does not effect the statements of theorems in the paper.

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## References

- [1] E. Alkan and A. Zaharescu, *Consecutive large gaps in sequences defined by multiplicative constraints*. *Canad. Math. Bull.* **51**(2008), no. 2, 172–181. doi:10.4153/CMB-2008-019-x
- [2] J. Wu, *Mathematical Reviews* **MR2414205**.

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