

Correction to: Factorization in the self-idealization of a PID

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The paper [3] by the authors contains an error. In Theorem 14, the last line of the proof of **Claim B** is incorrect when $k = \frac{n}{2}$ and $u = 1$. If $|D/pD| \neq 2$, the proof can be easily fixed by decomposing $1 = v + w$ with $v, w \in D \setminus pD$. In the case where $k = \frac{n}{2}$ and $|D/pD| = 2$ this is not possible, and the statement characterizing when $2 \in L(\alpha)$ needs to be changed.

The correct characterization for $2 \in L(\alpha)$ in Theorem 14 should read:

If $k \geq 1$, then $2 \in L(\alpha)$ if and only if one of the following non-exclusive statements holds:

- $k < \frac{n}{2}$,
- n is even and $|D/pD| \neq 2$,
- n is even and either $n = 2$ or $k \neq \frac{n}{2}$.

The characterization of $2 \in L(a)$ is used in description of other lengths in the proof of Theorem 14. This statement also has to be corrected if $|D/pD| = 2$; we refer to [1, Theorem 2.18]. In Corollary 16 the assumption $|D/pD| \neq 2$ for all primes p of D has to be added.

The mistake was first noticed by A. McQueen, see [2], and later corrected by M. Axtell, N. R. Baeth, and J. Stickles. We refer to their paper [1], in particular Lemmas 2.6 and 2.7, for proofs in the case where $|D/pD| = 2$.

We sincerely regret the error and thank M. Axtell, N. R. Baeth, and J. Stickles for pointing it out to us.

The original article can be found online at <https://doi.org/10.1007/s40574-018-0161-5>.

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References

1. Axtell, M., Baeth, N.R., Stickles, J.: Factorizations in self-idealizations of PIRs and UFRs. *J. Boll. Unione Mat. Ital.* (2016)
2. Bachman, D., Baeth, N.R., McQueen, A.: Factorizations of upper triangular Toeplitz matrices. *Boll. Unione Mat. Ital.* **8**(2), 131–150 (2015)
3. Chang, G.W., Smertnig, D.: Factorization in the self-idealization of a PID. *Boll. Unione Mat. Ital.* (9) **6**(2), 363–377 (2013)