REGARDING "LIFTING SOLUTIONS TO PERTURBING PROBLEMS IN C^*-ALGEBRAS"

Introduction

Errata.

Comments.

1. Section

Errata.

Comments.

2. Section

Errata.
   Page 20, line 9: The definition of f_n should be $f_n = f_n(t) = (\frac{1}{n} + t)^{-1/2}$.

Comments. An omission here is no mention of Cohen's factorization theorem. I highly recommend the survey on factorization by Gert Pedersen [5].

3. Section

Errata.
   Page 24, line 11: Theorem 3.1.1 should say "$\mathcal{R}$ is bounded if and only if $\mathcal{R}$ is natural, closed under products and has at least one representation.

Comments. Several papers in recent years have dealt with the annoying question "what is a relation in a C^*-algebra," including [1, 2, 3, 4]. We now know [1, Theorem 2.1] that if we allowing very general relations (way beyond $*$-polynomial) then every separable C^*-algebra has a presentation with a single relation.

4. Section

Errata.
   Page 31, line 8: This sentence that begins "We may also include the relation $0 \leq g \leq 1 \ldots$" is not correct and should be ignored.
   Page 34, line -4: Theorem 4.2.3 needs an additional hypothesis, so at the end of the first sentence it should read "where X is a compact subset of the plane containing 0."

Comments.

5. Section

Errata.

Comments.

6. Section

Errata.

Comments.

7. Section

Errata.

Comments.

8. Section

Errata.

Comments.

9. Section

Errata.
> **Page 68, line 20:** In Proposition 9.1.3(2), the hypothesis should be "Given two sequences x_n and y_n in $M(A)$."

Comments.

10. Section

Errata.

Comments.

11. Section

Errata.

Comments.

12. Section

Errata.
> **Page 92, lines -6:** In Definition 12.2.1 the second part of the sentence should read "given $\varphi : A_1 \to C(E)$, there exists $\gamma : A_2 \to C(E)$ with $\gamma \circ \theta = \varphi$."

Comments. The projectivity of

$$C^*\langle b \mid b^n = 0, \ \|b\| \leq 1 \rangle$$

is now known: Tatiyan Shulman [6] has proven that nilpotent contractions lift to nilpotent contractions.

13. Section

Errata.

Comments.

14. Section

Errata.

Comments.

15. Section

Errata.

Page 113, lines 16: The second sentance in Theorem 15.1.1 should begin "For any finite generating set $F \subset A$,"

Comments.

16. Section

Errata.

Comments.

17. Section

Errata.

Comments.

18. Section

Errata.

Comments.

19. Section

Errata.

Comments.

References

[1] Søren Eilers and Terry A. Loring. Computing contingencies for stable relations. *Internat. J. Math.*, 10(3):301–326, 1999.

[2] Søren Eilers, Terry A. Loring, and Gert K. Pedersen. Stability of anticommutation relations: an application of noncommutative CW complexes. *J. Reine Angew. Math.*, 499:101–143, 1998.

[3] Eberhard H.-A. Gerbracht. *Elemente einer kombinatorischen Theorie der C^*-Algebren: Pr Asentationen von C^*-Algebren mittels Erzeugender und Relationen.* PhD thesis, Technische Universit at Carolo-Wilhelmina zu Braunschweig, 1998.

[4] Will Grilliette. Scaled-free objects. arxiv:1011.0717, 2010.

[5] Gert K. Pedersen. Factorization in C^*-algebras. *Exposition. Math.*, 16(2):145–156, 1998.

[6] Tatiana Shulman. Lifting of nilpotent contractions. *Bulletin of the London Mathematical Society*, 40(6):1002–1006, 2008.