

A Banach algebra which is generated by idempotents

A. ZIVARI-KAZEMPOUR

ABSTRACT.

In this paper we show that the Banach algebra $C_0(X)$, where X is a locally compact Hausdorff space, is generated by idempotents if and only if X is totally disconnected.

Acknowledgements. The useful comments of the anonymous referees are gratefully acknowledged.

REFERENCES

- [1] Bart , H., Ehrhardt, T. and Silbermann, B., *Logarithmic residues in the Banach algebra generated by the compact operators and the identity*, Math. Nachr., **268** (2004), 3–30
- [2] Bottcher, A. and Spitkovsky, I. M., *Classification of the finite-dimensional algebras generated by two tightly coupled idempotents*, Linear Algebra Appl., **439** (2013), 538–551
- [3] Bottcher, A. and Spitkovsky, I. M., *Group inversion in certain finite-dimensional algebras generated by two idempotents* , Indag. Math. (N.S), **23** (2012), 715–732
- [4] Bottcher, A. and Spitkovsky, I. M., *On certain finite-dimensional algebras generated by two idempotents*, Linear Algebra Appl., **435** (2011), 1823–1836
- [5] Finck, T., Roch, S. and Silbermann, B., *Banach algebras generated by two idempotents and one flip*, Math. Nachr., **216** (2000), 73–94
- [6] Folland, G. B., *Real Analysis: modern techniques and their application*, Second edition, New York, 1999
- [7] Ilie, M. and Spronk, N., *The algebra generated by idempotents in a Fourier-Stieltjes algebra*, Houston J. Math., **33** (2007), No. 4, 1131–1145
- [8] Krupnik, N., *Symmetrization of the symbol in Banach algebras generated by idempotents*, Integral Eq. Operator Theory., **31** (1998), 470–481
- [9] Krupnik, N., Roch, S. and Silbermann, B., *On C^* -algebras generated by idempotents*, J. Func. Anal., **137** (1996), 303–319
- [10] Krupnik, N. and Spigel, E., *Invertibility symbol for a Banach algebra generated by two idempotents and a shift*, Integral Eq. Operator Theory., **17** (1993), 567–578
- [11] Munkers, J. R., *Topology*, Second edition, Upper Saddle River: Prentice Hall, 2000
- [12] Rudin, W., *Real and Complex Analysis*, New York, 1970

DEPARTMENT OF MATHEMATICS
AYATOLLAH BORUJERDI UNIVERSITY
BORUJERD, IRAN.
E-mail address: zivari@abru.ac.ir