Discussiones Mathematicae
General Algebra and Applications 30 (2010) 137–146
doi:10.7151/dmagga.1166

FACTORING AN ODD ABELIAN GROUP BY LACUNARY CYCLIC SUBSETS

Sándor Szabó

Institute of Mathematics and Informatics
University of Pécs
Ifjúság u. 6
7624 Pécs, Hungary
e-mail: sszabo7@hotmail.com

Abstract

It is a known result that if a finite abelian group of odd order is a direct product of lacunary cyclic subsets, then at least one of the factors must be a subgroup. The paper gives an elementary proof that does not rely on characters.

Key words and phrases: factorization of finite abelian groups, periodic subsets, cyclic subsets, lacunary cyclic subsets, Hajós-Rédei theory.

2000 Mathematics Subject Classification: Primary 20K01; Secondary 05B45, 52C22, 68R05.

References

[1] K. Corrádi and S. Szabó, *A Hajós type result on factoring finite abelian groups by subsets*, Mathematica Pannonica **5** (1994), 275–280.

[2] G. Hajós, *Über einfache und mehrfache Bedeckung des n-dimensionalen Raumes mit einem Würfelgitter*, Math. Zeit. **47** (1942), 427–467. doi:10.1007/BF01180974

[3] L. Rédei, *Die neue Theorie der Endlichen Abelschen Gruppen und Verallgemeinerung des Hauptsatzes von Hajós*, Acta Math. Acad. Sci. Hungar. **16** (1965), 329–373. doi:10.1007/BF01904843

[4] A.D. Sands, *A note on distorted cyclic subsets*, Mathematica Pannonica **20** (2009), 123–127.

[5] S. Szabó and A.D. Sands, *Factoring Groups into Subsets*, Chapman and Hall, CRC, Taylor and Francis Group, Boca Raton 2009.

Received 20 November 2008
Revised 28 January 2010