

Peter Danchev

G-nilpotent units of commutative group rings

Comment.Math.Univ.Carolin. 53,2 (2012) 179 –187.

Abstract: Suppose R is a commutative unital ring and G is an abelian group. We give a general criterion only in terms of R and G when all normalized units in the commutative group ring RG are G -nilpotent. This extends recent results published in [Extracta Math., 2008–2009] and [Ann. Sci. Math. Québec, 2009].

Keywords: group rings, normalized units, nilpotents, idempotents, decompositions, abelian groups

AMS Subject Classification: 16S34, 16U60, 20K10, 20K20, 20K21

REFERENCES

- [1] Bourbaki N., *Commutative Algebra, Chapters 1–7*, Elements of Mathematics (Berlin), Springer, Berlin, 1989.
- [2] Danchev P., *On a decomposition of normalized units in abelian group algebras*, An. Univ. Bucuresti Mat. **57** (2008), no. 2, 133–138.
- [3] Danchev P., *Trivial units in commutative group algebras*, Extracta Math. **23** (2008), no. 1, 49–60.
- [4] Danchev P., *Trivial units in abelian group algebras*, Extracta Math. **24** (2009), no. 1, 47–53.
- [5] Danchev P., *G-unipotent units in commutative group rings*, Ann. Sci. Math. Québec **33** (2009), no. 1, 39–44.
- [6] Karpilovsky G., *On units in commutative group rings*, Arch. Math. (Basel) **38** (1982), 420–422.
- [7] Karpilovsky G., *On finite generation of unit groups of commutative group rings*, Arch. Math. (Basel) **40** (1983), 503–508.
- [8] Karpilovsky G., *Unit Groups of Group Rings*, Longman Scientific and Technical, Harlow, 1989.
- [9] Karpilovsky G., *Units of commutative group algebras*, Exposition. Math. **8** (1990), 247–287.
- [10] Passman D., *The Algebraic Structure of Group Rings*, Wiley-Interscience, New York, 1977.
- [11] Polcino Milies C., Sehgal S., *An Introduction to Group Rings*, Algebras and Applications, 1, Kluwer, Dordrecht, 2002.
- [12] Sehgal S., *Topics in Group Rings*, Marcel Dekker, New York, 1978.
- [13] May W., *Group algebras over finitely generated rings*, J. Algebra **39** (1976), 483–511.