

CENTERS OF INTEGRAL GROUP RINGS

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The group ring $\mathbb{Z}G$ of a finite group G has only *trivial central units* if all elements of the center of the units of $\mathbb{Z}G$ already belong to G . It turned out that this is equivalent to the group-theoretical concept of an *inverse semi-rational group*, as introduced by D. Chillag and S. Dolfi [CD10]. Using this interplay between group-theory and the theory of orders, new results have been obtained. In this talk we will discuss this connection and survey recent results [BMP16, Mah16, Bäck17].

REFERENCES

- [Bäck17] A. Bächle, *Trivial central units in integral group rings of solvable groups*, preprint (2017), 13 pages, [arXiv:1701.04347v2](https://arxiv.org/abs/1701.04347v2) [math.GR].
- [BMP16] G.K. Bakshi, S. Maheshwary, and I.B.S. Passi, *Integral group rings with all central units trivial*, J. Pure Appl. Algebra (2016), in press, [http://dx.doi.org/10.1016/j.jpaa.2016.10.017](https://doi.org/10.1016/j.jpaa.2016.10.017), preprint at [arXiv:1606.06860v1](https://arxiv.org/abs/1606.06860v1) [math.RA].
- [CD10] D. Chillag and S. Dolfi, *Semi-rational solvable groups*, J. Group Theory **13** (2010), no. 4, 535–548.
- [Mah16] S. Maheshwary, *Integral group rings with all central units trivial: solvable groups*, preprint (2016), 8 pages, [arXiv:1612.08344v1](https://arxiv.org/abs/1612.08344v1) [math.RA].

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