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**Zbl 0867.20045****de Vivo, Clorinda; Metelli, Claudia** (Vivo, C. de) **$B^{(1)}$ -groups: Some counterexamples.** (English)

Arnold, David M. (ed.) et al., Abelian groups and modules. Proceedings of the international conference at Colorado Springs, CO, USA, August 7–12, 1995. New York, NY: Marcel Dekker. Lect. Notes Pure Appl. Math. 182, 227-232 (1996). ISBN 9-8247-9789-2/pbk

A  $B^{(1)}$ -group is a finite rank torsion-free abelian group that can be realized as the quotient of a finite direct sum of subgroups of the additive rationals factored by a rank-one subgroup. This class of groups has been well-studied, in particular by Fuchs and Metelli, who used 0-1 matrices to obtain a characterization. Out of their work arose a conjecture that  $B^{(1)}$ -groups might in some sense be determined by their typesets. This paper produces some clever, hard-won examples that show the conjecture is false.

The first example gives  $B^{(1)}$ -groups  $G$ ,  $H$  of rank five and having the same typeset, with  $G$  strongly indecomposable and  $H$  not. In the second example,  $G$  and  $H$  have rank 8 and the same typeset, are both strongly indecomposable, but not quasi-isomorphic. The third example is similar, with groups of rank 11. These examples can also be used to refute various conjectures on  $B^{(1)}$ -groups made by other authors.

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*Classification* :

\*20K15 Torsion free abelian groups, finite rank

20K99 Abelian groups