

1147-13-570

Luchozar L. Avramov, Courtney Gibbons and Roger Wiegand* (rwiegand@unl.edu),
Department of Mathematics, University of Nebraska, Lincoln, NE 68588-0130. *The monoid of
Betti tables over a short Gorenstein algebra.*

Let k be a field and R a short, standard graded, Gorenstein k -algebra. The Hilbert function of R is then $1 + es + s^2$, and we always assume that the embedding dimension $e = \dim_k R_1$ is at least 3. The monoid of isomorphism classes of finite-length R -modules is factorial (Krull-Remak-Schmidt Theorem), but R has wild representation type, so there is no hope of classifying the indecomposable modules. In contrast, the monoid $B(R)$ of Betti tables of these modules is very far from being factorial, but its atoms allow a pleasant description, both in monoid-theoretic terms and also in terms of the representation theory of the ring. We will explain why $B(R)$ is atomic, classify its atoms, and demonstrate spectacular failure of factoriality. (Received January 26, 2019)