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A broken circuit ring. (English) [Zbl 1095.13024](#)
[Beitr. Algebra Geom. 47, No. 1, 161-166 \(2006\)](#).

Summary: Given a matroid M represented by a linear subspace $L \subset \mathbb{C}^n$ (equivalently by an arrangement of n hyperplanes in L), we define a graded ring $R(L)$ which degenerates to the Stanley-Reisner ring of the broken circuit complex for any choice of ordering of the ground set. In particular, $R(L)$ is Cohen-Macaulay, and may be used to compute the h -vector of the broken circuit complex of M . We give a geometric interpretation of $\text{Spec}R(L)$, as well as a stratification indexed by the flats of M .

MSC:

- 13F55** Commutative rings defined by monomial ideals; Stanley-Reisner face rings; simplicial complexes
13D40 Hilbert-Samuel and Hilbert-Kunz functions; Poincaré series

Cited in **2** Reviews
Cited in **24** Documents

Full Text: [EMIS](#) [EuDML](#) [arXiv](#)