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Maximal minors of a matrix with linear form entries. (English) Zbl 1320.15014

Linear Multilinear Algebra 63, No. 8, 1599-1606 (2015).

Let P be a matrix whose entries are homogeneous polynomials in n variables of degree one over an algebraically closed field. The main theorem of this paper says that the maximal minors (say, m -minors) of P generate the linear space of homogeneous polynomials of degree m if P has the maximal rank m at every point of the affine n -space except for the origin. A counterexample shows that the result does not hold if the field is not algebraically closed.

Reviewer: [Huajun Huang \(Auburn\)](#)

MSC:

- [15A54](#) Matrices over function rings in one or more variables
- [15A15](#) Determinants, permanents, traces, other special matrix functions
- [13D02](#) Syzygies, resolutions, complexes and commutative rings

Keywords:

[maximal minors](#); [polynomials](#); [Eagon-Northcott complexes](#); [Korn's inequality](#)

Full Text: [DOI](#)

References:

- [1] DOI: [10.1007/978-3-642-10455-8](#) · [Zbl 1246.35005](#) · [doi:10.1007/978-3-642-10455-8](#)
- [2] Hartshorne R, Vol. 52 of graduate texts in mathematics (1977)
- [3] Atiyah MF, Introduction to commutative algebra (1969)
- [4] DOI: [10.1007/978-3-642-18808-4](#) · [doi:10.1007/978-3-642-18808-4](#)

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