Zheng, Ya-Nan

The characteristic polynomial of the complete 3-uniform hypergraph. (English) Zbl 07374648
Linear Algebra Appl. 627, 275-286 (2021)

Summary: In this paper, we give the characteristic polynomial of the complete 3-uniform hypergraph. We show that the characteristic polynomial is the product of some cubic polynomials, so we can easily compute the spectra of complete 3-uniform hypergraphs. This computation includes a complete description of the eigenvalues’ multiplicities. We also show the algebraic multiplicities of 0, 1 and \(\left(\frac{n}{2}\right)\) of a complete 3-uniform hypergraph with \(n\) vertices.

MSC:

15A18 Eigenvalues, singular values, and eigenvectors
15A69 Multilinear algebra, tensor calculus
05C65 Hypergraphs

Keywords:
characteristic polynomial; resultant; hypergraph; spectrum

Full Text: DOI

References:


This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.