Gong, Ming-Peng
Generalized symmetric tensors and related topics. (English) Zbl 0846.15012

For $T = \sum_{\sigma \in G} M(\sigma) \otimes \mathcal{P}(\sigma)$, where M is a unitary matrix representation of the group G as unitary linear operators on a space U, and $\mathcal{P}(\sigma)$ the permutation operator on $W = \otimes^n V$, a generalized symmetric tensor is defined as a tensor of the form $T(u \otimes w)$, where $u \in U$ and w is a decomposable tensor of W. The author discusses the properties of generalized symmetric tensors. The conditions for two generalized symmetric tensors to be equal are obtained. Finally, a new characterization of the set A satisfying $\mathcal{M}(AX) = \mathcal{M}(X)$ for arbitrary X with $\mathcal{M}(A) = \sum_{\sigma \in G} M(\sigma) \prod_{i=1}^{n} a_{i\sigma(i)}$ is presented.

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MSC:

15A72   Vector and tensor algebra, theory of invariants

Cited in **1** Document

Keywords:

unitary linear operator; permutation operator; endomorphism; generalized symmetric tensor; decomposable tensor

Full Text: DOI

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