A bound for the real Waring rank of monomials

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ABSTRACT

The K-rank of a homogeneous polynomial \( f \) of degree \( d \) is the smallest number of \( d \)-th power of linear forms over \( K \) of which \( f \) is a \( K \)-linear combination. For a given real form, we can consider both the complex rank and the real rank, where \( K \) is a complex field and real field, respectively. The complex rank of monomials is known in [1] and [2]. For the real rank, only the binary case is known and we don’t know about the ternary case and further. We propose the new upper bound for the real rank of monomials which is smaller than the former upper bound in [3]. We claim that this new upper bound coincide with the former results and give some hints on finding the real rank of monomials.

REFERENCES