INFERNITE DIMENSIONAL ALGEBRAS WITH NO SIMPLE BASES

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Following [1], a basis $B$ over an infinite dimensional $F$-algebra $A$ is amenable if for all $r \in A$, the set of the coordinate vectors of the family $\{rb | b \in B\}$ with respect to $B$ is summable. A basis $B$ is said to be congenial to a basis $C$ if the coordinate vectors of the elements of $B$ represented with respect to $C$ is summable. If $B$ is congenial to $C$ but $C$ is not congenial to $B$, then we say that $B$ is properly congenial to $C$. An amenable basis $B$ is called simple if it is not properly congenial to any other amenable basis. In [1], the fundamental question whether all algebras have simple bases has been raised. In this work, using a construction inspired by that in [2] and [3], we introduce a family of algebras granting us examples of algebras without simple bases and of one-sided simple bases. This is a joint work with Sergio R. López-Permouth and Rebin A. Muhammad.

REFERENCES


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