Abstract

Given any directed graph E and field K, one may construct the Leavitt path algebra of E with coefficients in K (denoted $LK(E)$) [1], [2]. Over the past decade, various structural properties of the algebras $LK(E)$ have been discovered, with many of the results in the subject taking on the following form: $LK(E)$ has some specified algebraic property if and only if E has some specified graph-theoretic property. There are a number of ring-theoretic properties which $LK(E)$ possesses for any graph E. These include: $LK(E)$ is hereditary (every one-sided ideal is projective), $LK(E)$ is semiprimitive (zero Jacobson radical), and $LK(E)$ is ring-isomorphic to its opposite ring.

Herein I present a perhaps surprising result about the structure of the finitely generated one-sided ideals of a Leavitt path algebra obtained in collaboration with Gene Abrams and Francesca Mantese [3]: For any graph E and field K, the Leavitt path algebra $LK(E)$ is Bezout, i.e., every finitely generated one-side ideal is principal.

[1] G. Abrams and G. Aranda Pino, The Leavitt path algebra of a graph, J. Algebra 293(2) (2005), 319?334.

[2] P. Ara, M.A. Moreno, and E. Pardo, Non-stable K-theory for graph algebras, Algebr. Represent. Theory 10(2) (2007), 157?178.