

Leavitt path algebras

From a directed graph one can generate an algebra which captures the movements along the graph. One such algebras are Leavitt path algebras. Despite being introduced only 10 years ago, Leavitt path algebras have arisen in a variety of different contexts as diverse as analysis, symbolic dynamics, noncommutative geometry and representation theory. In fact, Leavitt path algebras are algebraic counterpart to graph C^* -algebras, a theory which has become an area of intensive research globally. There are strikingly parallel similarities between these two theories. Even more surprisingly, one cannot (yet) obtain the results in one theory as a consequence of the other; the statements look the same, however the techniques to prove them are quite different (as the names suggest, one uses Algebra and other Analysis). These all suggest that there might be a bridge between Algebra and Analysis yet to be uncovered.

In this talk, we introduce Leavitt path algebras and try to classify them by means of (graded) Grothendieck groups. We will ask nice questions!