

## **Pullbacks of Leavitt path algebras from pushouts of graphs**

Leavitt path algebras are algebras associated to directed graphs that generalize Leavitt algebras and at the same time constitute the purely algebraic part of the theory of graph  $C^*$ -algebras. Many algebraic properties of Leavitt path algebras, such as simplicity or classification of certain ideals, can be described purely in terms of the underlying directed graph. Motivated by this interplay between graphs and algebras, as well as some natural examples from noncommutative topology, we ask the following question: When a pushout of directed graphs gives rise to a pullback of associated Leavitt path algebras? We prove that the answer is yes for admissible injective pushouts of graphs in which case we obtain 0 surjective pullbacks of Leavitt path algebras. Furthermore, we show that for a different class of graphs one can also obtain non-surjective pullbacks of algebras.

Based on joint work with A. Chirvasitu, P. M. Hajac and S. Reznikhoff.