# On some classes of subalgebras of Leavitt path algebras

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**a joint work with**

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**Abstract**

The history of Leavitt path algebras dates back to the 1960s, when William G. Leavitt posed a question regarding the existence of $R$ rings that satisfy the equality $R^i = R^j$ as right-hand modules over R. The concept of Leavitt path algebras was introduced between 2005 and 2007. This construction was developed to algebraically represent combinatorial objects associated with Cuntz-Krieger algebras and $C^*$-algebras. The study of Leavitt path algebras is of interest to both algebraists and functional analysts, particularly those working with $C^*$-algebras. The flexible nature of Leavitt path algebra construction allows for the generation of numerous examples of algebras with specific properties.

An important special case of Leavitt path algebras is the class of matrix algebras $M_n(F)$ over a field F, where $n$ is a natural number or infinity (infinite-size matrices have a countable number of rows and columns with a finite number of non-zero elements in each). In my presentation, I will recall definition of Leavitt path algebras. Based on this, I will demonstrate a construction of maximal commutative subalgebras of Leavitt path algebras and their connections with well-known examples of maximal commutative subalgebras of matrix algebras over a field.

## Keywords

Leavitt path algebras, maximal commutative subalgebras, matrix algebra.

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