

On non-commutative association schemes of rank 6

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An association scheme is a coloring of a complete graph satisfying certain regularity conditions. It is a generalization of groups and has many applications in algebraic combinatorics. Every association scheme yields a special matrix algebra called the Bose-Mesner algebra of a scheme. A scheme is called commutative if its Bose-Mesner algebra is commutative. Commutative schemes were the main topic of the research in this area for decades. Only recently non-commutative association schemes attracted attention of the researchers. In my talk I'll present the results about non-commutative association schemes of the smallest possible rank, namely the rank 6. This is a joint work with A. Herman and B. Xu.

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