

The Oliver Club

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Factorizations of polynomials over noncommutative rings and a class of algebras associated with directed graphs

Factorizations of a polynomial $P(t) \in R[t]$ over an associative algebra R into a product of linear polynomials $(t - a)$ play an important role in various areas of mathematics. Such factorizations can be described by a directed graph. The elements a generate a subalgebra in R called the subalgebra of pseudo-roots of $P(t)$.

On the other hand, to any directed graph Γ one can associate the universal algebra of pseudo-roots $A(\Gamma)$ generated by edges of Γ with relations defined by pairs of paths having the same origin and the same end. Algebras $A(\Gamma)$ and their quadratic dual algebras (when they exist) have many interesting combinatorial properties. These properties will be discussed in the talk. The talk is based on joint papers with I. Gelfand, S. Serconek and R. Wilson.



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Refreshments will be served at 3:55 PM in the Mathematics Department lounge (532 Malott Hall).

**Thursday, November 16, 2006
at 4:25 PM in 406 Malott Hall**