

Taft actions on preprojective algebras

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We classify quantum symmetries of the preprojective algebra of extended Dynkin quivers of type A arising from Hopf actions of generalized Taft algebras. These preprojective algebras can be viewed as nonconnected analogues of the polynomial ring in two variables, so this is a generalization of the classification by Allman in the connected case. Our work relies on the classification of Taft actions on path algebras by Kinser and Walton, and Kinser and the presenting author. We also describe the invariant rings of some of these actions. In cases where the grouplike element acts via rotation on the underlying quiver, we compute invariants of the Taft action and, in certain cases, show that the invariant ring is isomorphic to the center of the preprojective algebra. This is joint work with Jason Gaddis.

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