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Group actions on quiver moduli spaces and branes

We consider two types of actions on moduli spaces of quiver representations over a field k and we decompose their fixed loci using group cohomology. First, for a perfect field k , we study the action of the absolute Galois group of k on the points of this quiver moduli space valued in an algebraic closure of k ; the fixed locus is the set of k -rational points and we obtain a decomposition of this fixed locus indexed by the Brauer group of k and give a modular interpretation of this decomposition. Second, we study algebraic actions of finite groups of quiver automorphisms on these moduli spaces; the fixed locus is decomposed using group cohomology and each component has a modular interpretation. Finally, we describe the symplectic and holomorphic geometry of these fixed loci in hyperkaehler quiver varieties in the language of branes. This is joint work with Florent Schaffhauser.