

Braided Bi-Galois theory and its application to Brauer groups

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Let (H, \mathcal{R}) be a quasi-triangular Hopf algebra or a quantum group, \mathcal{C} the representation category of H , which is a braided tensor category. The transmutation of (H, R) is a braided Hopf algebra in the category \mathcal{C} . We study the braided autoequivalences of the Drinfeld center $\mathcal{Z}(\mathcal{C})$ which are trivializable on \mathcal{C} . To this end, we need to develop a general braided bi-Galois theory for Hopf algebras in braided tensor categories, and study quantum-commutative bi-Galois objects in the braided tensor categories. After establishing the aforementioned theory, we will apply it to compute the Brauer group of the quantum group (H, R) .