

A Duality Theorem for Monoidal Hom Hopf Module Algebras

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We prove a duality theorem for (possibly) infinite dimensional monoidal Hom Hopf algebras (H, α) over k . In the infinite dimensional case, H^* is too big and we replace H^* by finite dual H° of (H, α) or, more generally, a monoidal Hom Hopf subalgebra U of H° . It is also necessary to assume that H and U have bijective antipodes. Let (A, β) be a (H, α) Hom module algebra that the action of (H, α) on (A, β) is locally finite in a sense appropriate to the choice of U , and that the action of $H \sharp U$ satisfies a certain RL -condition. Under these conditions, we have a Hom algebra isomorphism $(A \sharp H) \sharp U \cong A \otimes (H \sharp U)$.

References

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