On Semisimple Hopf Algebras of Dimension $pq^n$

Li Dai and Jingcheng Dong

Abstract. Let $p, q$ be prime numbers with $p^2 < q$, $n \in \mathbb{N}$, and $H$ a semisimple Hopf algebra of dimension $pq^n$ over an algebraically closed field of characteristic 0. This paper proves that $H$ must possess one of the following structures: (1) $H$ is semisolvable; (2) $H$ is a Radford biproduct $R \# kG$, where $kG$ is the group algebra of group $G$ of order $p$, and $R$ is a semisimple Yetter–Drinfeld Hopf algebra in $\mathbb{kG}_Y D$ of dimension $q^n$. 