Fabio GAVARINI

“A PBW basis for Lusztig’s form of untwisted affine quantum groups”

ABSTRACT

Let $\hat{\mathfrak{g}}$ be an untwisted affine Kac-Moody algebra over the field $\mathbb{C}$, and let $U_q(\hat{\mathfrak{g}})$ be the associated quantum enveloping algebra. Let $\mathfrak{U}_q(\hat{\mathfrak{g}})$ be the Lusztig’s integer form of $U_q(\hat{\mathfrak{g}})$, generated by $q$-divided powers of Chevalley generators over a suitable subring $R$ of $\mathbb{C}[q,q^{-1}]$. We prove a Poincaré-Birkhoff-Witt like theorem for $\mathfrak{U}_q(\hat{\mathfrak{g}})$, yielding a basis over $R$ made of ordered products of $q$–divided powers of suitable quantum root vectors.

References


