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“The R -matrix action of untwisted affine quantum groups at roots of 1”

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ABSTRACT

Let $\hat{\mathfrak{g}}$ be an untwisted affine Kac-Moody algebra. The quantum group $U_q(\hat{\mathfrak{g}})$ is known to be a quasitriangular Hopf algebra (to be precise, a braided Hopf algebra). Here we prove that its unrestricted specializations at odd roots of 1 are braided too: in particular, specializing q at 1 we have that the function algebra $F[\widehat{H}]$ of the Poisson proalgebraic group \widehat{H} dual of \widehat{G} (a Kac-Moody group with Lie algebra $\hat{\mathfrak{g}}$) is braided. This in turn implies also that the action of the universal R -matrix on the tensor products of pairs of Verma modules can be specialized at odd roots of 1.

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