On the Classification of Rational Quantum Tori and the Structure of Their Automorphism Groups

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Abstract. An $n$-dimensional quantum torus is a twisted group algebra of the group $\mathbb{Z}^n$. It is called rational if all invertible commutators are roots of unity. In the present note we describe a normal form for rational $n$-dimensional quantum tori over any field. Moreover, we show that for $n = 2$ the natural exact sequence describing the automorphism group of the quantum torus splits over any field.