

Quantum symmetries of the twisted tensor products of C^* -algebras

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Abstract

We consider the construction of twisted tensor products in the category of C^* -algebras equipped with orthogonal filtrations and under certain assumptions on the form of the twist compute the corresponding quantum symmetry group, which turns out to be the generalised Drinfeld double of the quantum symmetry groups of the original filtrations. We show how these results apply to a wide class of crossed products of C^* -algebras by actions of discrete groups. We also discuss an example where the hypothesis of our main theorem is not satisfied and the quantum symmetry group is not a generalised Drinfeld double. This is a joint work with Jyotishman Bhowmick, Arnab Mandal and Adam Skalski.