

Baaq, Saad

Regular representation of Woronowicz's quantum displacements groups. (Représentation régulière du groupe quantique des déplacements de Woronowicz.) (French) [Zbl 0840.46036](#)
Connes, A. (ed.), Recent advances in operator algebras. Collection of talks given in the conference on operator algebras held in Orléans, France in July 1992. Paris: Société Mathématique de France, Astérisque. 232, 11-48 (1995).

Summary: Let H be a Hilbert space. In this article, under appropriate "regularity" conditions, we associate to every multiplicative unitary $V \in \mathcal{L}(H \otimes H)$, a pair of Hopf C^* -algebras in duality. We show that the regular representation of the quantum $E_\mu(2)$ group of Woronowicz is a multiplicative unitary satisfying our conditions and we calculate its covariant representations. We also calculate the Haar measures of $E_\mu(2)$ and its Pontryagin dual and we give their modular theory.

For the entire collection see [\[Zbl 0832.00041\]](#).

MSC:

- [46L05](#) General theory of C^* -algebras
- [46L60](#) Applications of selfadjoint operator algebras to physics
- [46M05](#) Tensor products in functional analysis
- [16W30](#) Hopf algebras (associative rings and algebras) (MSC2000)
- [81R50](#) Quantum groups and related algebraic methods applied to problems in quantum theory

Cited in 1 Review Cited in 10 Documents
--

Keywords:

Hopf C^* -algebras; regular representation of the quantum $E_\mu(2)$ group of Woronowicz; multiplicative unitary; Haar measures; Pontryagin dual; modular theory