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Tracial States on Quantum Group C^ -algebras*

When working with the tracial states on a group C^* -algebra $C_\pi^*(G)$ of a group G , an indispensable fact is the observation that the tracial states on $C_\pi^*(G)$ are exactly the states that are invariant with respect to the conjugation action of G on $C_\pi^*(G)$. An analogous observation for discrete quantum groups had been missing until quite recently: it was established for unimodular discrete quantum groups in a recent paper by Kalantar, Kasprzak, Skalski, and Vergnioux. In this talk we will present a generalization of this result for arbitrary discrete quantum groups and discuss various consequences of this result on the reduced C^* -algebras of discrete quantum groups.