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“Quantization of Poisson groups”

ABSTRACT

Let $G^\tau$ be a connected simply connected semisimple algebraic group, endowed with generalized Sklyanin-Drinfel’d structure of Poisson group; let $H^\tau$ be its dual Poisson group. By means of quantum double construction and dualization via formal Hopf algebras, we construct new quantum groups $U_{q,\wp}^M(h)$ — dual of the multiparameter quantum group $U_{q,\wp}^M(g)$ built upon $g^\tau$, with $g = \text{Lie}(G)$ — which yield infinitesimal quantization of $H^\tau$ and $G^\tau$; we study their specializations at roots of 1 (in particular, their classical limits), thus discovering new quantum Frobenius morphisms. The whole description dualize for $H^\tau$ what was known for $G^\tau$, completing the quantization of the pair $(G^\tau, H^\tau)$.

REFERENCES


