

Deformed Canonical Group and the Quantization of Noncommutative Configuration space Abstract.

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Abstract

In this work we propose to use the idea of the canonical group to quantize two simple noncommutative configuration spaces, namely the plane and the 2-torus. The canonical groups for the corresponding commutative case are required to be deformed in order to quantize these noncommutative configuration spaces whose symplectic forms are modified. This is due to the lifting of the Lie algebra co-cycle obstruction and hence enlarges the group to satisfy the generalized canonical commutation relation. It can also be shown that the canonical group of noncommutative plane is the contraction of that of the noncommutative torus.