The quantum space

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Abstract

We define the quantum space and the quantum group Glq(3) as the group of automorphisms of it.

1 The quantum plane

The quantum plane is defined by the relation of q-commutation:

$$xy = qyx$$

2 The quantum space

The quantum space depends of xyz such that:

$$xy = qyx$$

$$zx = qxz$$

$$yz = qzy$$

3 The quantum group $Gl_q(3)$

The quantum group $Gl_q(3)$ is defined as the automorphisms of the quantum space. The matrices A, A^t respect the relations of the quantum space so that we obtain 36 relations for the 9 coefficients of the matrix A.

4 Bibliography

C.Kassel, "Quantum Groups", Springer, Berlin, 1995.
A.Guichardet, "Groupes Quantiques ", CNRS editions, Paris, 1995.