

## Quantum Algebra from Generalized Q-Algebra

**Authors :** Muna Tabuni

**Abstract :** The paper contains an investigation of the notion of Q algebras. A brief introduction to quantum mechanics is given, in that systems the state defined by a vector in a complex vector space H which have Hermitian inner product property. H may be finite or infinite-dimensional. In quantum mechanics, operators must be hermitian. These facts are saved by Lie algebra operators but not by those of quantum algebras. A Hilbert space H consists of a set of vectors and a set of scalars. Lie group is a differentiable topological space with group laws given by differentiable maps. A Lie algebra has been introduced. Q-algebra has been defined. A brief introduction to BCI-algebra is given. A BCI sub algebra is introduced. A brief introduction to BCK=BCH-algebra is given. Every BCI-algebra is a BCH-algebra. Homomorphism maps meanings are introduced. Homomorphism maps between two BCK algebras are defined. The mathematical formulations of quantum mechanics can be expressed using the theory of unitary group representations. A generalization of Q algebras has been introduced, and their properties have been considered. The Q- quantum algebra has been studied, and various examples have been given.

**Keywords :** Q-algebras, BCI, BCK, BCH-algebra, quantum mechanics

**Conference Title :** ICMSEA 2021 : International Conference on Mathematical Sciences, Engineering and Applications

**Conference Location :** Rome, Italy

**Conference Dates :** June 03-04, 2021