World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:15, No:06, 2021

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