South East Asian J. of Mathematics and Mathematical Sciences
Vol. 19, No. 2 (2023), pp. 65-76

DOI: 10.56827/SEAJMMS.2023.1902.5 **ISSN (Online): 2582-0850**

ISSN (Print): 0972-7752

A CRYSTAL STUDY ON NEUTROSOPHIC INCLINE

P. Muralikrishna and Surya M.

PG and Research Department of Mathematics,
Muthurangam Government Arts College (Autonomous),
Vellore - 632002, Tamil Nadu, INDIA

E-mail : pmkrishna@rocketmail.com, suryamano95@gmail.com

(**Received:** *Feb. 13, 2022* **Accepted:** *Jul. 28, 2023* **Published:** *Aug. 30, 2023)*

Abstract: As fuzzy subalgebras and fuzzy ideals plays an important role in the research field of fuzzy algebraic structures. Here, an incline algebra is considered and moved forward in this paper. i.e., the concept of neutrosophic subincline and ideal of incline algebra is studied and the related properties of neutrosophic subincline and ideals on incline algebra are discussed. Furthermore, the image, preimage, level set, product are also analysed.

Keywords and Phrases: Incline algebra, neutrosophic set, neutrosophic subincline, neutrosophic ideal.

2020 Mathematics Subject Classification: 16Y60, 16Y99.

1. Introduction

Incline algebra was inititated by a Chinese Cybernetics expert Cao Zhiqiang [2]. Inclines are a generalization of Boolean algebra and fuzzy algebra a special type of a semiring and they give a way to combine algebras with ordered structures to express the degree of intensity of binary relations. An incline is a structure which has an associative, commutative addition,and a distributive multiplication such that $u + u = u, u + uv = u \ \forall \ u, v$. It has both a semiring structure and a poset structure. The ideals in a ring or semigroup form an incline, as do the topologizing filters in a ring. Incline theory is based on semiring theory and lattice theory. Also, Cao. Z. Q, Kim and Roush [6] introduced the theories of incline algebra in monograph. This theory and its related concepts are applied in many