

**MAXIMAL AND MINIMAL PSEUDO SYMMETRIC IDEALS IN
PARTIALLY ORDERED TERNARY SEMIGROUPS**

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Abstract: We have introduced the notions of maximal and minimal pseudo symmetric ideals of a partially ordered ternary semigroup T and studied their properties. We show that every maximal pseudo symmetric ideal of a commutative partially ordered ternary semigroup with identity is a prime pseudo symmetric ideal. We gave an example to show that the converse of this statement is not true.

Keywords and Phrases: Partially ordered ternary semigroup, pseudo symmetric ideal, maximal pseudo symmetric ideal, minimal pseudo symmetric ideal.

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1. Introduction

The concept of a ternary semigroup was first introduced by Lehmer [9], who also established the theory of a ternary algebraic system in 1932. In 1965, F. M. Sioson introduced the ideal theory of ternary semigroups. Iampan [4] has defined the concept of partially ordered ternary semigroups and he also developed the theory of partially ordered ternary semigroups. In [11, 12], Siva Rami Reddy et