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VALUATION RINGS IN FUNCTION FIELDS ONTO LATTICES

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Abstract: Taking a complete Heyting algebra L and using L-sets, we will build the L-subrings of valuation and L-valuations of an algebraic function field of one variable F/K, as a generalization of the valuation rings and discrete valuations of F/K, and we will obtain many properties of them, and their analogues to the Theorem of Approximation of an amount finite of non-equivalent valuations.

Keywords and Phrases: Function fields, Discrete valuations, Ring valuations, Lattices, Fuzzy sets, Fuzzy rings, L-set, L-subrings.

2020 Mathematics Subject Classification: 13F30, 11T06, 11H06.

1. Introduction

The concept of fuzzy set was introduced in the year of 1965 by Lotfi Asker Zadeh in his paper entitled "Fuzzy Sets" (see [7]), in which he offers, in a certain direction, generalizations of some basic concepts of the set algebra. Three years later, C. L. Chang applied the concept of fuzzy set to realize many generalizations