

PRINCIPAL INTUITIONISTIC FUZZY IDEALS AND FILTERS ON A LATTICE

SARRA BOUDAUD, LEMNAOUAR ZEDAM

AND

SOHEYB MILLES

Laboratory of Pure and Applied Mathematics
Department of Mathematics
University of M'sila, Algeria

e-mail: sarra.boudaoud@univ-msila.dz
lemnaouar.zedam@univ-msila.dz, l.zedam@gmail.com
soheyb.milles@univ-msila.dz

Abstract

In this paper, we generalize the notion of principal ideal (resp. filter) on a lattice to the setting of intuitionistic fuzzy sets and investigate their various characterizations and properties. More specifically, we show that any principal intuitionistic fuzzy ideal (resp. filter) coincides with an intuitionistic fuzzy down-set (resp. up-set) generated by an intuitionistic fuzzy singleton. Afterwards, for a given intuitionistic fuzzy set, we introduce two intuitionistic fuzzy sets: its intuitionistic fuzzy down-set and up-set, and we investigate their interesting properties.

Keywords: lattice, intuitionistic fuzzy set, principal intuitionistic fuzzy ideal, principal intuitionistic fuzzy filter.

2010 Mathematics Subject Classification: 03E72, 06B23, 47H10.

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Received 14 February 2019

Revised 26 October 2019

Accepted 2 February 2020