PICTURE FUZZY MINIMAL STRUCTURE SPACES AND ITS APPLICATIONS

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Abstract. This paper is an introduction of picture fuzzy minimal structure space and discusses properties of picture fuzzy minimal structure space. It has plenty of applications. This motivates us to present the concept of picture fuzzy minimal structure space. We define picture fuzzy minimal structure space, closure and interior of a set and subspace of picture fuzzy minimal structure space. Finally, as an application, a decision making problem is solved using picture fuzzy minimal structure with a score function.

1. Introduction

Zadeh's [21] Fuzzy set laid the foundation of many theories such as intuitionistic fuzzy set and picture fuzzy set, rough sets etc. Later, researchers developed K. T. Atanassov's [1] intuitionistic fuzzy set theory in many fields such as differential equations, topology, computer science and so on. F. Smarandache [19, 20] found that some objects have indeterminacy or neutral other than membership and non-membership. So, he coined the notion of neutrosophy. In this era, Researchers [8, 9, 12, 13, 14] applied the concept of neutrosophy when object has inconsistent, incomplete information. Picture fuzzy set theory, introduced by Cuong[5] in 2014, which is an extension of fuzzy and intuitionistic fuzzy set theory similar to that of neutrosophic sets, which has got a plenty of real time applications, which motivated us to do some contribution in this field of research. The universal set X and ∅ forms a topology (Munkrer [6]). Popa [18] introduced minimal structures and defined separation axioms using minimal structure. M. Alimohammady, M. Roohi[2] introduced fuzzy minimal structure in lowen sense. S.Bhattacharya (Halder)[3] presented the concept of intuitionistic fuzzy minimal space.