β-*b*-REGULARITY IN FUZZY SETTING

Anjana Bhattacharyya

Department of Mathematics
Victoria Institution (College),
78 B, A.P.C. Road, Kolkata - 700009, INDIA

E-mail : anjanabhattacharyya@hotmail.com

Abstract: This paper deals with a new type of fuzzy open-like set, viz., fuzzy β-b-open set, the class of which is strictly larger than that of fuzzy open set as well as fuzzy preopen set [11], fuzzy semiopen set [1], fuzzy α-open set [4] and fuzzy β-open set [6]. However, three different types of fuzzy continuous-like functions are introduced and studied and also the mutual relationships of these functions are established. Afterwards, two new types of separation axioms and a new type of compactness are introduced and studied. It is shown that in a fuzzy β-b-regular space, fuzzy β-b-open set coincides with fuzzy open set. In the last section some applications of the functions defined here are established.

Keywords and Phrases: Fuzzy β-b-open set, fuzzy regular open set, fuzzy β-b-r-continuous function, fuzzy β-b-continuity, fuzzy almost β-b-continuity, fuzzy extremally disconnected space.

2020 Mathematics Subject Classification: 54A40, 03E72.

1. Introduction

Fuzzy β-open set is introduced in [6]. Using this concept as a basic tool, here we introduce fuzzy β-b-open set. Fuzzy continuity is introduced in [5]. Here we introduce fuzzy β-b-r-continuous function, an independent concept of fuzzy continuity. Next two new types of functions are introduced here, viz., fuzzy β-b-continuity, and fuzzy almost β-b-continuity. It is shown that fuzzy continuity implies fuzzy