

ON γ -P-REGULAR SPACES

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ABSTRACT. We define and explore γ -P-regularity which is a generalization of P-regularity [16] and γ -regularity [3]. We also define and discuss strongly γ -semi-continuous functions.

1. INTRODUCTION

Signal and Arya [21] defined a new separation axiom called almost regularity which is weaker than regularity. It has been shown [21] that for Hausdorff spaces, this axiom occupies a position between Urysohn's separation axiom and T_3 -axiom. Maheswari and Prasad [17] have defined another axiom called s-regularity which is weaker than regularity (without T_2). C. Dorsett [7] defined and investigated a new separation axiom called semi-regularity. It is shown that s-regularity is weaker than semi-regularity. Semi-regularity due to C. Dorsett [7] and almost regularity due to Signal and Arya [20] are both weaker than regularity, but both are independent of each other. M. Khan and B. Ahmad [16] defined another form of regularity called P-regularity which implies semi-regularity [7] as well as almost regularity [21]. S. Kasahara [12] defined an operation α on topological spaces. H. Ogata [13] introduced the concept of γ -open sets and investigated the related topological properties. B. Ahmad and F. U. Rehman [1, 20] introduced the notions of γ -exterior and γ -boundary points in topological spaces. They also continued studying the properties and characterizations of (γ, β) -continuous mappings introduced by H. Ogata [13]. B. Ahmad and S. Hussain further studied the properties of γ -operations in topological spaces [2, 3]. They introduced and explored the notion of γ -semi-open sets in topological spaces [5, 10]. The concept of γ -s-closed spaces and γ -s-closed subspaces have been studied [4, 8]. It is known [8] that the concept of γ -s-closed space is a generalization of s-closed space [14].

In this paper, we define and explore γ -P-regularity which is a generalization of P-regularity [16] and γ -regularity [3]. We also define and discuss strongly γ -semi-continuous functions in Section 4.