

## LOW SEPARATION AXIOMS ASSOCIATED WITH $\hat{g}^*$ -s-CLOSED SETS

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**Abstract.** In this paper, we introduce  $\kappa T_{1/2}$ -spaces,  ${}^*T_{1/2}$ -spaces,  $\kappa T_b$ -spaces,  $\kappa T_c$ -spaces,  $\kappa T_d$ -spaces,  $\kappa T_f$ -spaces,  $\kappa T_{\hat{g}^*}$ -spaces and  $T_b^\kappa$ -spaces and investigate their characterizations.

### 1. Introduction

Levine [7], Mashhour et al. [13] and Njastad [14] have introduced the concept of semi-open sets, preopen sets and  $\alpha$ -open sets, respectively. Levine [8] introduced generalised closed sets and studied their properties. Bhattacharya and Lahiri[3], Arya and Nour [2], Maki et al. [10, 9] introduced semi-generalised closed sets, generalised semi-closed sets and  $\alpha$ -generalised closed sets and generalised  $\alpha$ -closed sets, respectively. Veerakumar [21] defined  $\hat{g}$ -closed sets. Chandrasekararao and Narasimhan [4] introduced and studied  $g^*$ -s-closed sets. Pious Missier and Anto [16] introduced  $\hat{g}^*$ -s-closed sets in topological spaces.

The rest of this paper is organized as follows. In Section 2, we present the fundamental concepts and sets in topological spaces. In Section 3, we introduce  $\kappa T_{1/2}$ -spaces,  ${}^*T_{1/2}$ -spaces,  $\kappa T_b$ -spaces,  $\kappa T_c$ -spaces,  $\kappa T_d$ -spaces,  $\kappa T_f$ -spaces,  $\kappa T_{\hat{g}^*}$ -spaces and  $T_b^\kappa$ -spaces and investigate their characterizations.

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