

**$(\vartheta, \varrho)$ -FUZZY  $Z_\alpha$  OPEN SETS IN DOUBLE FUZZY  
TOPOLOGICAL SPACES**

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**Abstract:** In this paper we introduce  $(\vartheta, \varrho)$ - fuzzy  $Z_\alpha$ -open,  $(\vartheta, \varrho)$ -fuzzy  $Z_\alpha$ -closed sets,  $(\vartheta, \varrho)$ - fuzzy  $Z_\alpha$ -clopen sets and study some of their properties in double fuzzy topological spaces.

**Keywords and Phrases:**  $(\vartheta, \varrho)$ - fuzzy  $Z_\alpha$ -open,  $(\vartheta, \varrho)$ -fuzzy  $Z_\alpha$ -closed sets,  $(\vartheta, \varrho)$ -fuzzy  $Z_\alpha$ -clopen sets,  $(\vartheta, \varrho)$ -fuzzy  $Z_\alpha$ -interior,  $(\vartheta, \varrho)$ -fuzzy  $Z_\alpha$ -closure.

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