

## FUZZY $\mu$ - GRAPHOIDAL COVERING NUMBER OF LEVEL $\eta$ -CHILD TREE

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### Abstract

Let  $G = (V, E)$  be a simple graph. Fuzzy  $\mu$ - graphoidal covers are collected, similar to that of the graphoidal covers [1] for the crisp graph. Derived on the collection of Fuzzy  $\mu$  - graphoidal covers, Fuzzy  $\mu$  - graphoidal covering number  $\Phi_\mu(G)$  is defined as follows:

$F_\mu(G)$  is a collection of paths in a fuzzy graph  $G(\sigma, \mu)$  satisfying the following conditions:

1. A path  $p$  in  $F_\mu(G)$  of the form  $v_1e_1v_2e_2, \dots, v_i e_i v_{i+1}, \dots, v_k e_k v_{k+1}$  satisfies  $\mu(e_1) \leq \mu(e_2) \leq \dots < \mu(e_k)$ . This path is called as a fuzzy  $\mu$ -path.
2. Every vertex is an internal vertex of at most one fuzzy  $\mu$ -path in  $F_\mu(G)$ .
3. Every edge of the graph  $G$  occurs exactly only one fuzzy  $\mu$ -path in  $F_\mu(G)$ .  
Fuzzy  $\mu$  - graphoidal covering number  $\Phi_\mu(G) =$  Minimum cardinality taken over all fuzzy  $\mu$  - graphoidal covers  $F_\mu(G)$  of the fuzzy graph  $G$ .

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Key Words : *Fuzzy graph, Fuzzy  $\mu$ - graphoidal covering number, Fuzzy weak  $\mu$ - graphoidal covering number*