

## FUZZY SYMMETRIC SUBGROUPS AND CONJUGATE FUZZY SUBGROUPS OF A GROUP

*W.B.Vasantha Kandasamy and D. Meiyappan*

In this paper we prove some properties about conjugate fuzzy subgroups of a group. We prove

- (i) if  $\lambda$  and  $\mu$  be conjugate fuzzy subgroups of  $G$  then  $o(\lambda) = o(\mu)$ .
- (ii) If  $\mu$  is a fuzzy subgroup of a group  $G$ , then (a)  $o(a \mu a^{-1}) = o(\mu)$   $a \in G$   
(b)  $o(a \mu a^{-1}) = o(\mu) = o(\mu a)$ ,  $a \in G$
- (iii) Let  $\mu$  be a fuzzy subgroup of a group  $G$ , then  $o(\mu) \mid o(G)$
- (iv) Let  $\lambda$  and  $\mu$  be two improper fuzzy subgroups of a group  $G$ .  $\lambda$  and  $\mu$  are conjugate fuzzy subgroups of  $G$  if and only if  $\lambda = \mu$ .
- (v) Let  $\lambda$  and  $\mu$  be any two fuzzy subsets of an abelian group  $G$ ,  $\lambda$  and  $\mu$  are conjugate fuzzy subsets of  $G$  if and only if  $\lambda = \mu$ . Finally we prove if  $f$  is a fuzzy symmetric subgroup of  $S_3$  then  $o(\text{Im}(f)) = 3$ .

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