Equivalence relations on fuzzy subgroups*

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Abstract—We compare four equivalence relations defined in fuzzy subgroups: Isomorphism, fuzzy isomorphism and two equivalence relations defined using level subset notion. We study if the image of two equivalent fuzzy subgroups through aggregation functions is a fuzzy subgroup, when it belongs to the same class of equivalence and if the supreme property is preserved in the class of equivalence and through aggregation functions.

Index Terms—Aggregation function, fuzzy subgroup, level subgroup, isomorphism, fuzzy isomorphism, sup property