SOME REGULAR BEHAVIORS OF PARTIAL INTUITIONISTIC FUZZY AUTOMATA

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Abstract: A partial intuitionistic fuzzy automaton (pifa) is defined and their intuitionistic fuzzy regular behaviors are discussed. It is shown that union and intersection of intuitionistic fuzzy subset of Σ^* are intuitionistic fuzzy regular behaviors. Also pumping lemma for pifa is proved.

1. Introduction and Preliminaries

Partial fuzzy automaton (pfa) was introduced by Malik and Mordeson [4]. With the help of pfa, a pifa and their regular behaviors are analyzed. We show that if $\lambda_1 = (\lambda_{\mu_1}, \lambda_{\nu_1})$ and $\lambda_2 = (\lambda_{\mu_2}, \lambda_{\nu_2})$ are $L_{\mathscr{A}}$ - intuitionistic fuzzy regular behaviors, then so are $(\lambda_{\mu_1} \cup \lambda_{\mu_2}, \lambda_{\nu_1} \cap \lambda_{\nu_2})$ and $(\lambda_{\mu_1} \cap \lambda_{\mu_2}, \lambda_{\nu_1} \cup \lambda_{\nu_2})$. Also we prove pumping lemma for pifa.

Definition 1.1. [1] *Given a non-empty set Σ. Intuitionistic fuzzy set (ifs) A*