

Some kinds of the controllable problems for fuzzy control dynamic systems

ABSTRACT

In this work, we have discussed the fuzzy solutions for fuzzy controllable problem, fuzzy feedback problem, and fuzzy global controllable (GC) problems. We use the method of successive approximations under the generalized Lipschitz condition for the local existence and furthermore, we have described the contraction principle under suitable conditions for global existence and uniqueness of fuzzy solutions. We have too the GC results for fuzzy systems. Some examples and computer simulation illustrating our approach are also given for these controllable problems.

Keyword: Fuzzy set; Generalized Hukuhara derivative; Fuzzy dynamical systems; Fuzzy control differential equations under Hukuhara differentiability