

Fuzzy Zorn's lemma with application for Fuzzy Tychonoff theorem

Abstract We introduce the fuzzy axioms of choice, fuzzy Zorn's lemma and fuzzy well-ordering principle, which are the fuzzy versions of the axioms of choice, Zorn's lemma and well-ordering principle, and discuss the relations among them. As an application of fuzzy Zorn's lemma, we give the fuzzy version of Tychonoff's Theorem in fuzzy topology. By use of the fuzzy Zorn's lemma, we prove that fuzzy Tychonoff's Theorem.