

**APPROXIMATE FIXED POINTS OF α - ψ -CONTRACTIVE
SET-VALUED MAPS AND APPLICATION**

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ABSTRACT. It is known that we can obtain approximate solutions of complicate multi-singular integro-differential equations. In this way, we should use modern fixed point results especially approximate fixed points of discontinuous maps such α - ψ -contractions. In this work, we are going to study the existence of approximate fixed point of α - ψ -contractive usual and set-valued maps. We provide two related examples to illustrate our main result. We also provide an approximate q -difference problem to show application of our first result.

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