Živanović, Ž.
Collection of quasiextendable maps in functional spaces. (English) Zbl 0712.54012

There are numerous modifications of the notion of retract and related notions [comp. J. Klisowski, Colloq. Math. 46, 23-35 (1982; Zbl 0503.54022)]. In the present paper the author continues his studies of the notion of contraction, neighbourhood contraction, and related concepts. Let $A$ be a non-empty subset of a metric compact space $X$ and $V$ a neighbourhood of $A$ in $X$. A map $r: X \to V$ is a contraction iff $r(x) = x$ for every $x \in A$; the set $A$ is a contract of $X$ iff for every $V$ such a contraction exists; $A$ is a neighbourhood contract of $X$ if it is a contract of arbitrary neighbourhood of $A$ in $X$. A space $X$ is an absolute (neighbourhood) contract iff for every $Y$ and every homeomorphism $h$ of $X$ onto a closed subset of $Y$, the set $h(X)$ is a (neighbourhood) contract of $Y$. It is known that the class $AS$ of absolute contracts coincides with FAR.

The author investigates the set $F$ of quasiextendable maps of a compactum $X$ into $Y$. Theorem 1.3 says that $F$ is closed in $Y^X$. Theorem 1.4 says that $Y^X$ is $AS$ if and only if $Y$ is $AS$. Further, the author gives some characterizations of the classes $AS$ and $ANS$.

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MSC:

- 54C55 Absolute neighborhood extensor, absolute extensor, absolute neighborhood retract (ANR), absolute retract spaces (general properties)
- 54C15 Retraction
- 54C20 Extension of maps
- 54C35 Function spaces in general topology

Keywords:

- absolute neighbourhood contract; absolute contract; quasiextendable maps