ROCKY MOUNTAIN
JOURNAL OF MATHEMATICS
Volume 23, Number 4, Fall 1993

ON PSEUDOCONTINUOUS MAPPINGS

ELIZA WAJCH

ABSTRACT. This paper is devoted to an investigation of some classes of pseudocontinuous mappings of topological spaces and to those topological properties which are invariant under pseudocontinuous images.

In [**5**], R.A. Johnson and W. Wilczyński introduced various concepts of pseudocontinuous mappings which are near to continuous mappings in the sense that the inverse image of an open set becomes an open set after removing from it or adding to it a set from a fixed σ-ideal. Some types of pseudocontinuity are strictly related to the Baire property of functions, as well as to the well-known and important classes of quasicontinuous, somewhat continuous and nearly continuous mappings. The present paper, being a continuation of [**5**], investigates notions of pseudocontinuity and points out some topological properties which are preserved under pseudocontinuous images.

We shall use the standard notation. For cardinal functions not defined here, see [**1**] and [**6**]. All cardinals are assumed to be infinite. The symbol R will always stand for the space of reals with the usual topology.

In what follows, X and Y denote topological spaces. Let $\varkappa$ be an infinite cardinal number, and let $\mathcal{J}$ be a $\varkappa$-ideal of subsets of X, i.e., $\mathcal{J}$ is a collection of subsets of X such that if $A \subseteq B \in \mathcal{J}$, then $A \in \mathcal{J}$, and if $A_s \in \mathcal{J}$ for $s \in S$ with $|S| \leq \varkappa$, then $\cup_{s\in S} A_s \in \mathcal{J}$.

Definitions. A mapping $f : X \to Y$ is called:

(1) *weakly $\mathcal{J}$-pseudocontinuous* if, for any open subset V of Y, there exists an open subset W of X with $f^{-1}(V)\Delta W \in \mathcal{J}$;

Received by the editors on June 20, 1992, and in revised form on August 21, 1992.
AMS *subject classification numbers.* 54C10, 26A15.
Key words and phrases. $\varkappa$-ideal, $\mathcal{J}$-pseudocontinuity, quasicontinuity, $\varkappa$-Lindelof property, $\varkappa$-pseudonet, connectedness.