# A PROPERTY OF CONTINUA SIMILAR TO LOCAL CONNECTIVITY*

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1. *Introduction.* An important property of locally connected compact spaces is that the complement of every continuum is the sum of a finite or enumerably infinite set of connected regions. If, however, a compact space $Z$ is not locally connected and $X$ is a sub-continuum, neither of the properties of $Z$ being locally connected about $X$ and $Z-X$ being the sum of an at most enumerably infinite set of connected regions involves the other. A property that is stronger than that of $Z$ being locally connected about $X$ is the following, introduced in a recent paper† by G. T. Whyburn: A sub-continuum $X$ is $\epsilon$-separated by a finite set of sub-continua of $Z$ if, for each $\epsilon>0$, there is a finite set of sub-continua $\{F_i\}$ of $Z$ such that $Z-\sum_1^m F_i$ is the sum of two separated sets $Z_1$ and $Z_2$, where $Z_1$ contains $X$ and all points of $Z_1+\sum_1^m F_i$ have a distance less than $\epsilon$ from $X$. It is the purpose of this paper to describe another quasi-local property and its relation to those just mentioned, which in strength lies between local connectivity and $\epsilon$-separability. The work will be carried out for separable metric continuous spaces in which the Bolzano-Weierstrass property is valid; such spaces will be called $W$-spaces for the sake of brevity.

DEFINITIONS. If $a$ and $b$ are disjoint bounded continua (or points) in a $W$-space $Z$, and $Z$ can be expressed as the sum of two continua $H$ and $K$ such that $H\cdot b=K\cdot a=0$, we say that $Z$ is *divisible* between $a$ and $b$.

If $Z$ is divisible between the bounded sub-continuum (or point) $x$ and every sub-continuum of $Z-x$, then $x$ is called *biregular*.

For example, let $Z$ consist of a segment $ab$ of unit length and an enumerable set of segments $ab_n$, each of unit length and inclined to $ab$ at the angle $\pi/n$. Then $Z$ is locally connected at $a$,

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† *A generalized notion of accessibility*, Fundamenta Mathematicae, vol. 14, pp. 311–326.