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A CLASS OF ABSOLUTE RETRACTS

A Thesis presented in partial fulfilment  
of the requirements for the degree of  
Doctor of Philosophy in Mathematics  
at Massey University.

ALAN L. TYREE  
1973

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ABSTRACT

A restricted version of the Tietze Theorem is that a continuous mapping of a closed subspace of a metric space ranging in a closed interval may be extended to a continuous function defined upon the whole metric space. This may be viewed as a property of the closed interval and is expressed by saying that the interval is an absolute extensor. Thus, absolute extensors may be viewed as a generalisation of real intervals, and many of the desirable properties of intervals have been generalised to the class of absolute extensors.

In 1951, Dugundji showed that every convex subset of a locally convex linear topological space is an absolute extensor, thus dramatically extending the Tietze theorem.

In this thesis, a class of subsets of a normed linear space is defined. This new class of sets includes the convex sets and it is shown that these new sets are also absolute extensors.

ACKNOWLEDGEMENT

I wish to express my gratitude to Dr. Ivan L. Reilly for his guidance during the preparation of this thesis.

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