ON FIXATIONS OF SETS IN EUCLIDEAN SPACES

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The fixation of a collection C of sets is here understood to mean a set intersecting each element of C.

Theorem 1. *If C is a collection of disjoint continua lying in a bounded subset of the plane and having diameters greater than* 1, *then there exists a compact fixation F of C such that* $\dim F = 0$.

Theorem 2. *If C is a collection of components of a compact subset of the n-dimensional Euclidean space (where $n = 2, 3, \ldots$) and all the elements of C have diameters greater than* 1, *then there exists a compact fixation F of C such that* $\dim F \leqq n - 2$.

Whether the hypothesis concerning C in theorem 2 can be replaced by one similar to the hypothesis in theorem 1, namely that C is a collection of disjoint continua lying in a bounded subset of the n-dimensional Euclidean space (where $n = 3, 4, \ldots$) and having diameters greater than 1, remains an open question.

The proofs of these theorems and some related results will be published in Fundamenta Mathematicae in two forthcoming papers of D. Zaremba and myself.