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Problem

PROBLEM

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Let φ be an essential map of a compactum X into the n-dimensional sphere S^n. Is it true that for every map f of X into the n-dimensional euclidean space E^n there exist two points a, $a' \in X$ such that the points $\varphi(a)$ and $\varphi(a')$ are antipodean one to the other and that $f(a) = f(a')$?

A positive answer to this question would constitute a generalization not only of the usual theorem on antipodes, but also of the more general theorem proved recently by K. D. Joshi (Fund. Math. 80 (1973), p. 14). Let us add that in the formulation of this problem only shape-properties of the compactum X are used.