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Title: *On the minimal number of components of fixed point sets*

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Abstract: Nielsen number $N(f)$ serves as a lower bound for the number of fixed points of self maps in the homotopy class of the given map $f: X \rightarrow X$. It is also a lower bound for the number of components of fixed point sets of all such maps. But, in general, the relative Nielsen number $N(f; X, A)$ is not a lower bound for the number of components of fixed point set of the maps in the relative homotopy class of $f: (X, A) \rightarrow (X, A)$.

In this paper, we introduce a new relative homotopy invariant $N^C(f; X, A)$, which is a lower bound for the number of components of fixed point set of the maps in the relative homotopy class of $f: (X, A) \rightarrow (X, A)$. Some properties of $N^C(f; X, A)$ will be given, which are very similar to those of $N^C(f; X, A)$.