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On Generic Well-Posedness of Restricted Chebyshev Center Problems in Banach Spaces

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摘要
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On Generic Well-Posedness of Restricted Chebyshev Center Problems in Banach Spaces

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Abstract Let $\scr B$ (resp. ${\scr K}$, ${\scr BC}$, ${\scr KC}$) denote the set of all nonempty bounded (resp. compact, bounded convex, compact convex) closed subsets of the Banach space X, endowed with the Hausdorff metric, and let G be a nonempty relatively weakly compact closed subset of X. Let ${\scr B}^o$ stand for the set of all $F\in {\scr B}$ such that the problem (F,G) is well-posed. We proved that, if X is strictly convex and Kadec, the set ${\scr KC}\cap {\scr B}^o$ is a dense G_{δ}-subset of ${\scr KC}\setminus G$. Furthermore, if X is a uniformly convex Banach space, we will prove more, namely that the set ${\scr B}\setminus {\scr B}^o$ (resp. ${\scr K}\setminus {\scr B}^o,$ ${\scr BC}\setminus {\scr B}^o$, ${\scr KC}\setminus {\scr B}^o$) is σ-porous in ${\scr B}$ (resp. ${\scr K}$, ${\scr BC}$, ${\scr KC}$). Moreover, we prove that for most (in the sense of the Baire category) closed bounded subsets G of X, the set ${\scr K}\setminus {\scr B}^o$ is dense and uncountable in ${\scr K}$.

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