Let $G$ be a subset of a normed linear space $X$. Then $g_f \in G$ is a best coapproximation to $f \in X$ if for all $g \in G$, $\|g - g_f\| \leq \|f - g\|$. If $G$ is a linear subspace of an inner-product space $X$, then the best coapproximations coincide with the best approximations. This work characterizes the best coapproximations when $X = L_\infty$. The characterization uses concepts from the best approximation theory. That is, the characterization is designed for comparison to the Kolmogorov criteria. In this setting best coapproximations do not coincide with the best approximations. However the authors have a few theorems exploring the relation between the two concepts. The authors also have theorems that specialize to the setting $X = C[a, b]$, and they have results on strongly unique best uniform coapproximation.

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MSC:

41A50 Best approximation, Chebyshev systems