Kitahara, Kazuaki; Nishi, Akihiro
On infinite weak Tchebycheff and Tchebycheff systems. (English) Zbl 1084.41539

Summary: Let $T$ be a subset of the real line $\mathbb{R}$. Let $\mathcal{C}_b(T)$ be the space of all real-valued continuous and bounded functions on $T$ and let $\mathcal{C}_0(T)$ be the subspace of $\mathcal{C}_b(T)$ consisting of functions $f$ such that $\{t \mid t \in T, |f(t)| \leq \varepsilon\}$ is compact for any $\varepsilon > 0$. $\mathcal{C}_b(T)$ and $\mathcal{C}_0(T)$ are endowed with the supremum norm. Approximating spaces spanned by infinite Chebyshev systems are closely related to antiproximinal subspaces. The purpose of this note is to study, in $\mathcal{C}_b(T)$ or $\mathcal{C}_0(T)$, the relations between infinite weak Chebyshev and Chebyshev systems, antiproximinal subspaces and the domains of functions $T$.

MSC:
41A50 Best approximation, Chebyshev systems