Interpolation sets in spaces of continuous functions

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According to S. Hartman and C. Ryll-Nardzewski, a subset S of a topological group G is an I_0 (or *interpolation*) set when every complex-valued bounded function defined on S can be interpolated by an almost periodic function of G. Understanding the properties of interpolation sets is a major topic in the theory of locally compact Abelian (LCA) groups, where there still are many unsolved questions, even for discrete Abelian groups. In this talk, we are concerned with the following variation of this notion: Let X be a topological space and let E be a Banach space. A subset Y of X is called *E-interpolation* (or I_E) set when for every function $g \in E^Y$ with relatively compact range in E, there exists $f \in C(X, E)$ such that $f_{|Y} = g$. We will report on some recent findings about the properties and existence of interpolation sets in spaces of continuous functions and will also discuss on some applications of our results in different settings.

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