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Basic embeddings in the plane

In our contribution we shall talk about a new, constructive proof of the characterization of compacta which are basically embedded in the plane.

A subset K of the plane is said to be *basically embedded*, if for each $f \in C(K)$ there exist $g, h \in C(\mathbb{R})$ such that $f(x, y) = g(x) + h(y)$ for each $(x, y) \in K$. According to Sternfeld and a reformulation of Skopenkov, a compact set $K \subset \mathbb{R}^2$ is basically embedded if and only if K does not contain arrays of arbitrary length, where an *array* is a sequence of points $\{(x_i, y_i) \in \mathbb{R}^2 \mid i \in I\}$, with $I = \{1, 2, \ldots, n\}$ or $I = \mathbb{N}$, such that either $x_{2i-1} = x_{2i}$ and $y_{2i} = y_{2i+1}$ for all $i \in I$ or $y_{2i-1} = y_{2i}$ and $x_{2i} = x_{2i+1}$ for all $i \in I$ and no two consecutive points are equal.