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Mingzhi Xuan* (mx0004@unt.edu), 1155 Union Circle #311430, Denton, TX 76203. *On Steinhaus Set of Four Points in \mathbb{R}^2* . Preliminary report.

A subset S of \mathbb{R}^2 is said to be a Steinhaus set (in \mathbb{R}^2) of another subset X , if and only if S meets every isometric copy of X in exactly one point. For example, it is easy to see that the Steinhaus set for singleton is the whole \mathbb{R}^2 and there is no Steinhaus set for two-point or three-point subset. In this paper, we prove that no four-point subset of \mathbb{R}^2 can have a Steinhaus set, using a combinatorial argument. (Received September 12, 2011)