1145-42-1456 **Larry Guth**, **AlexI Iosevich**, **Yumeng Ou** and **Hong Wang*** (hongwang@mit.edu), 143 Albany Street 339, Cambridge, MA 02139. *Falconer problem in* $\mathbb{R}^2$.

We show that if E is a set of dimension at least $\frac{5}{4}$ on the plane, then its distance set $\Delta(E) = \{|x-y|, x \in E, y \in E\}$ has positive Lebesgue measure. This improves upon Wolff's theorem for $\dim E > \frac{4}{3}$. (Received September 22, 2018)