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Janos Pach* (pach@cims.nyu.edu), Courant Institute, 251 Mercer Street, New York, NY, and
Xiaomin Chen, Mario Szegedy and **Gabor Tardos**. *Delaunay graphs with respect to rectangles.*

Given a set P of n points in general position in the plane, define their Delaunay graph $D(P)$ on the vertex set P by connecting two points $p, q \in P$ with an edge if and only if there is an axis-parallel rectangle that contains p and q , but no other elements of P . Smorodinsky et al. asked whether there exists a constant $c > 0$ such that the Delaunay graph of any set of n points in the plane contains an independent set of size at least cn ? We answer this question in the negative. We also show that for a set P of n randomly and uniformly selected points in the unit square, $D(P)$ has an independent set of size at least $cn/\log n$, with probability tending to 1. (Received February 20, 2007)