1094-52-132 **Konstantin E. Tikhomirov***, 632 Central Academic Building, University of Alberta, Edmonton, Alberta T6G 2G1, Canada. *The χ-distribution and the randomized Dvoretzky's theorem in l_∞^n.*

Let $\varepsilon \in (0, 1/2)$. We prove that if for some $n > 1$ and $k > 1$, a majority of k-dimensional sections of the ball in l_∞^n is $(1 + \varepsilon)$-spherical then necessarily $k \leq C\varepsilon \ln n / \ln \frac{1}{\varepsilon}$, where C is a universal constant. The bound for k is optimal up to the choice of C. (Received August 19, 2013)