1138-05-251 **Huseyin Acan*** (`huseyin.acan@rutgers.edu`) and **Boris Pittel** (`bgp@math.ohio-state.edu`).
On the largest component of the intersection graph of a random chord diagram.

A chord diagram of size n is a pairing of $2n$ points. When the points are placed on a circle, this gives n chords. For a chord diagram D, its intersection graph is formed by taking the chords of D as the vertices of the graph and creating an edge between two vertices whenever the corresponding chords cross each other. We study the largest component of $H_{n,m}$, where $H_{n,m}$ denotes the intersection graph of a uniformly random chord diagram with n chords and m crossings. We show that, with high probability, (i) the largest component contains almost all the edges and a positive fraction of all the vertices of $H_{n,m}$ when $m/(n \log n)$ tends to a limit in $(0, 2/\pi^2)$ and (ii) the size of the largest component is $O(\log n)$ when $m \leq n/14$. Hence, if there is a threshold for the appearance of a giant (linear size) component, it must be of order $\Omega(n)$ and $O(n \log n)$. (Received February 11, 2018)