

1109-60-148

Carl P Dettmann* (carl.dettmann@bris.ac.uk), University Walk, Bristol, England BS8 1TW, United Kingdom, and **Orestis Georgiou** and **Justin P Coon**. *Connectivity of random geometric graphs in domains with smooth or fractal boundaries.*

Random geometric graphs (RGGs) are constructed from a Poisson point process by linking points with mutual distance below a fixed bound. At high density, the probability that the graph is connected is controlled by isolated points, which are more likely near boundaries of the domain. This probability can be estimated using a sum over boundary components, if the boundaries are smooth, and the connection probability approaches unity. In contrast, fractal boundaries lead to stretched exponential decay of the probability with density. Connectivity of RGGs is a useful model for many wireless networks. (Received January 29, 2015)