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Distribution of components in the k -nearest neighbour random geometric graph for k below the connectivity threshold. (English) [Zbl 1288.60128](#)

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Consider a Poisson point process of intensity 1 in the plane. A random geometric graph G is defined on the set V of points of the process inside a square of area n by joining each point in V to its k -nearest neighbours in V . The distribution of small connected components of G is studied for $k = k(n)$ below the connectivity threshold. It is also shown that such components are in a specified sense not close together.

Reviewer: Ove Frank (Stockholm)

MSC:

[60K35](#) Interacting random processes; statistical mechanics type models; percolation theory

[60G55](#) Point processes (e.g., Poisson, Cox, Hawkes processes)

[05C80](#) Random graphs (graph-theoretic aspects)

Keywords:

[Random geometric graphs; Poisson process; nearest neighbour, connected components](#)

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