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Erica Flapan and **Kenji Kozai*** (kozai@math.berkeley.edu). *Linking number and writhe in random linear embeddings of graphs.*

We study random embeddings of graphs where the vertices are chosen uniformly in the unit cube, and edges realized by straight line segments. In particular, we show that for K_n , the growth rate of the sum of squared linking numbers and sum of squared writhe are on the order of $\theta(n(n!))$. The methods are also extended to random graphs on n vertices, where each pair of vertices is connected by an edge with probability p . The growth rates of the sum of squared linking numbers and writhe in this case are $\theta(p^n n(n!))$. As a corollary, we show that random linear embeddings of K_6 and $K_{3,3,1}$ have exactly one non-trivial link – which is a Hopf link – with high probability. (Received August 08, 2015)