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On the diameter of the pegging network

We consider the following process for generating large random graphs. Starting with any given graph, repeatedly add edges that join the midpoints of two randomly chosen edges. This process, which we call the *pegging process*, was motivated by a model recently used as a peer-to-peer network. We show that the growing graph is asymptotically very likely to have logarithmic diameter. (Joint work with Stephanie Gerke and Angelika Steger.)