

DIRECTED RANDOM GRAPHS WITH GIVEN DEGREE DISTRIBUTIONS

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We present a new directed random graph model whose in- and out-degree distributions can be chosen in advance from any type of distributions having finite mean. The model is closely related to the so-called pairing model and is based on in- and out-degree sequences of i.i.d. random variables. We explain how to circumvent the problem of how to force the two degree sequences to have the same sums without significantly destroying their distributional properties, and we present the directed versions of some classical results such as the limiting distribution for the number of self-loops and multiple edges.