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A NEW METHOD FOR ESTABLISHING SHARP THRESHOLD  
FUNCTIONS IN RANDOM INTERSECTION GRAPHS

In a random intersection graph  $G(n, m, p)$  to each vertex  $v$  from a vertex set  $V$  we assign a set of its features  $D_v$  by choosing independently each feature with probability  $p$  from a feature set  $W$ . Then we connect vertices  $v, v' \in V$  by an edge if and only if sets  $D_v$  and  $D_{v'}$  intersect. In the talk a new method for establishing threshold functions in  $G(n, m, p)$  will be presented. It will be used to determine sharp threshold functions in  $G(n, m, p)$  for  $k$ -connectivity, perfect matching containment and Hamilton cycle containment. In fact it will be shown that in some cases it is possible to obtain interesting results using relations between  $G(n, m, p)$  and random graph with independent edges, despite the fact that two models differ by a lot.