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**Zdenek Dvorak** and **Bernard Lidicky\*** (lidicky@iastate.edu). *Independent sets near the lower bound in bounded degree graphs.*

By Brook's Theorem, every  $n$ -vertex graph of maximum degree at most  $\Delta \geq 3$  and clique number at most  $\Delta$  is  $\Delta$ -colorable, and thus it has an independent set of size  $n/\Delta$ . We give an approximate characterization of graphs with independent set near this bound, and use it to show that the problem of deciding whether such a graph has an independent set of size at least  $n/\Delta + k$  has a kernel of size  $O(k)$ . (Received August 11, 2016)