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*The asymptotic value of the independence ratio for the direct graph power*

The independence ratio,  $i(G)$  of a graph  $G$  is the ratio of the independence number and the vertex number. Its asymptotic value for the direct power is  $A(G) = \lim_{k \rightarrow \infty} i(G^{\times k})$ , where  $G^{\times k}$  denotes the  $k$ th direct power of  $G$ . In the talk I will show that  $A(G)$  can be calculated from the ratios of the size of the independent sets of  $G$  and the size of their neighbourhoods, giving the answer for a question of Alon and Lubetzky. It also proves the conjecture of Brown, Nowakowski and Rall stating that  $A(G + H) = \max\{A(G), A(H)\}$ , where  $G + H$  denotes the disjoint union of the graphs.