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**Jacques Verstraete\*** ([jacques@ucsd.edu](mailto:jacques@ucsd.edu)), 9500 Gilman Drive, La Jolla, CA 92093-0112. *On cycle-complete graph Ramsey numbers.*

A notorious open problem in Ramsey theory is to determine the order of magnitude of  $r(C_k, K_t)$ , the cycle-complete graph Ramsey numbers. The best lower bounds for these quantities all arise from random graphs, more specifically, the  $C_k$ -free process, and give  $r(C_k, K_t) = \Omega^*(t^{(k-1)/(k-2)})$ . We consider a spectral and probabilistic approach to such problems, and improve this lower bound for  $k = 5$  and  $k = 7$  via a spectral approach and the probabilistic method. (Received January 23, 2019)