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James M. Carraher, Stephen G. Hartke, David Galvin, A. J. Radcliffe and Derrick Stolee* (dstolee@iastate.edu). *On independent sets in Cayley graphs over \mathbb{Z}* . Preliminary report.

A circulant graph is a Cayley graph over \mathbb{Z}_n . Determining the independence number or clique number of a circulant graph is a difficult problem. Motivated by recent work on uniquely K_r -saturated graphs, we investigate the density of independent sets in finitely-generated Cayley graphs over the integers. We use a search for periodic sets to provide lower bounds and use discharging arguments to find upper bounds. We are able to determine the exact density for many generator sets, but also state several conjectures. (Received September 17, 2013)