THE GIRTH OF CONVERGENCE GROUPS AND MAPPING CLASS GROUPS

SAEKO YAMAGATA, REVIEWED BY THOMAS KOBERDA

In the present article, the author studies the girth of groups. For a finitely generated group G with a generating set S, the girth of G with respect to S is the length of the shortest loop in the Cayley graph with respect to that generating set. The girth of G is the supremum of the girths of all Cayley graphs of G with respect to all finite generating sets. If a Cayley graph has no loops, its girth is defined to be infinite.

The main two results of the paper are that finitely generated convergence groups [see *Proc. London Math. Soc.* (3) 55 (1987), no. 2, 331–358; MR0896224 (88m:30057)] and finitely generated subgroups of the mapping class group which are not virtually cyclic have infinite girth. The author gives a dynamical characterization of groups with infinite girth and uses this criterion to prove the results.

Department of Mathematics, Harvard University, 1 Oxford St., Cambridge, MA 02138

E-mail address: koberda@math.harvard.edu