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**Reflection length in non-affine Coxeter groups.** (English) [Zbl 1244.20038]


Summary: The reflection length of an element of a Coxeter group is the minimal number of conjugates of the standard generators whose product is equal to that element. In this paper, we prove the conjecture of J. McCammond and T. K. Petersen [J. Algebr. Comb. 34, No. 4, 711-719 (2011; Zbl 1229.20034)] that reflection length is unbounded in any non-affine Coxeter group. Among the tools used, the construction of word-hyperbolic quotients of all minimal non-affine Coxeter groups might be of independent interest.

**MSC:**

- 20F55 Reflection and Coxeter groups (group-theoretic aspects)
- 20F05 Generators, relations, and presentations of groups
- 20F67 Hyperbolic groups and nonpositively curved groups

**Keywords:**

- reflection lengths
- non-affine Coxeter groups
- word-hyperbolic quotient groups
- products of reflections

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