

**COMPLETE GROWTH SERIES OF COXETER
GROUPS WITH MORE THAN THREE
GENERATORS**

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ABSTRACT. In this paper invoking several methods we compute the complete growth series of Coxeter groups with more than three generators. In the most general method we apply the algebraic version of Moebius inversion formula of number theory and obtain a recursive analog of the usual growth series for complete growth series. This formula will show that the complete growth series is a rational function.

1. Introduction

In [3] Grigorchuk and Nagnibeda introduced the notions of complete growth series and operator growth series for discrete groups and proved several facts about surface groups and hyperbolic groups using these notions. In [6] we computed complete growth series of Coxeter groups which are generated with a set of cardinality 3 using a complete set of rewriting rules and showed that these series are all rational. In this paper we continue our work in [6] for Coxeter groups with more than three generators and noting that in this

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