

AN IRRATIONAL-SLOPE THOMPSON'S GROUP

JOSÉ BURILLO, BRITA NUCINKIS, AND LAWRENCE REEVES

Abstract: The purpose of this paper is to study the properties of the irrational-slope Thompson's group F_τ introduced by Cleary in [11]. We construct presentations, both finite and infinite, and we describe its combinatorial structure using binary trees. We show that its commutator group is simple. Finally, inspired by the case of Thompson's group F , we define a unique normal form for the elements of the group and study the metric properties for the elements based on this normal form. As a corollary, we see that several embeddings of F in F_τ are undistorted.

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Key words: Thompson's group, irrational-slope, normal forms, distortion.