

**Toeplitz quotient C^* -algebras and ratio limits for
random walks**

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We study quotients of the Toeplitz C^* -algebra of a random walk, similar to those studied by the speaker and Markiewicz for finite stochastic matrices. We introduce a new Cuntz-type quotient C^* -algebra for random walks that have convergent ratios of transition probabilities. These C^* -algebras give rise to new notions of ratio limit space and boundary for such random walks, spurring further research in probability. Our results are leveraged to identify a unique symmetry-equivariant quotient C^* -algebra for any symmetric random walk on a hyperbolic group, shedding light on a question of Viselter on C^* -algebras of subproduct systems.