

LIMITING DENSITY AND FREE STRUCTURES

JULIA F. KNIGHT

ABSTRACT. The talk describes ongoing work joint with Johanna Franklin and Meng-Che (Turbo) Ho. Gromov asked, “What does a typical group look like? He suggested a way of describing typical behavior in terms of limiting density. Based on a remark of Fine, I conjectured in 2013 that for group presentations with $n \geq 2$ generators and a single relator, an elementary first order sentence has limiting density 1 iff it is true in the non-Abelian free groups. There are partial positive results due to Coulon, Ho, and Logan, and to Karlampovich and Sklinos, but the full conjecture remains open. We generalize Gromov’s question to other algebraic varieties (in the sense of universal algebra). We have examples and results illustrating different possible behaviors.

UNIVERSITY OF NOTRE DAME, NOTRE DAME, INDIANA (U.S.A.)
E-mail address: `knight.1@nd.edu`