

1057-20-247

Joshua Roberts* (jroberts@ms.uky.edu), 719 Patterson Office Tower, Department of Mathematics, University of Kentucky, Lexington, KY 40506. *Upper bounds and generators for low dimensional group homology.*

Group homology plays an important role in algebraic K-theory, and its computational aspects remain an issue of interest. Although significant progress has been made for finite groups, serious obstacles exist for infinite groups. However, given a finitely presented group G , Hopf's formula expresses the second integral homology of G in terms of generators and relators. We give an algorithm that exploits Hopf's formula to estimate $H_2(G; k)$, with coefficients in a finite field k . Moreover, we describe techniques to find explicit descriptions of generators for this vector space. Finally, we give example calculations which are related to a conjecture of Quillen. (Received January 24, 2010)