

1037-20-152

Daniel C. Cohen (cohen@math.lsu.edu) and **Goderdzi Pruidze*** (gio@math.lsu.edu),
Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. *Topological
complexity of basis-conjugating automorphisms of free groups.*

Topological complexity, recently introduced by M. Farber, is a homotopy invariant that has applications in the motion planning problem in robotics. We calculate the topological complexity for the basis-conjugating automorphism group of a free group. The calculation uses information about the geometric dimension and cohomology of these groups. We also solve the same problem for the upper-triangular subgroups of the basis-conjugating groups. (Received January 31, 2008)