1050-55-176   **Daniel C. Cohen** and **Goderdzi Pruidze*** (`gio@math.lsu.edu`). *Motion planning in tori and topological complexity of basis-conjugating automorphism groups.*

Let X be a subcomplex of the standard CW-decomposition of the n-dimensional torus. We exhibit an explicit optimal motion planning algorithm for X. This construction is used to calculate the topological complexity of complements of general position arrangements and Eilenberg–Mac Lane spaces associated to right-angled Artin groups. As time permits, we will also discuss the topological complexity of basis-conjugating automorphism groups. (Received March 04, 2009)