

980-55-104

**Michael Farber** (mfarber@tau.ac.il) and **Sergey Yuzvinsky\*** (yuz@math.uoregon.edu),  
Department of Mathematics, University of Oregon, Eugene, OR 97403. *Topological robotics and  
arrangement complements.*

The main notion of topological robotics is the topological complexity (TC) of a topological space. This notion is similar to the Lusternik-Schnirelman category and is a particular case of the Schwarz genus. From robotics point of view  $TC(X)$  measures discontinuity of motion planners on  $X$ . In the talk we compute  $TC(M)$  for the complement  $M$  of some complex hyperplane arrangements including the braid arrangements and generic ones. Notice that for a braid arrangement a motion on  $M$  is just a collision free motion of several ordered points on a plane. We also compute  $TC(M)$  for the configuration space  $M$  of several distinct ordered points in the 3-dimensional space. (Received August 08, 2002)