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Aaron D Abrams* (abrams@math.uga.edu), Department of Mathematics, University of Georgia, Athens, GA 30602. *Optimal trajectories for robots in the plane*. Preliminary report.

We will give a preliminary report on the following problem. Suppose we have n disks of radius 1, which we think of as mobile robots, sitting disjointly in the Euclidean plane. Each robot has a task, which is to move to some (other) specified location in the plane. Each robot has maximum speed 1, and the robots are not permitted to collide. What's the fastest way to move all the robots to their destinations? (Received January 22, 2003)