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Jillian Cannons and **Jeremy J. Lin***, jlinardi@cpp.edu, and **Thuy Lu**. *Particle Swarm Optimization-Based Source Seeking with Obstacle Avoidance*.

In this work, we consider finding an optimal solution to a source-seeking problem where an electromagnetic source is to be located by a group of robots. We do not assume knowledge of a theoretical model for the source signal and study the case when significant noise may be present in the environment. Thus, robot movement is controlled based upon measurements of the strongest signals received. In particular, we implement an existing algorithm that uses Inertia Weight Particle Swarm Optimization, which incorporates randomness and is intended to mimic behaviors observed in nature. We extend current static and dynamic obstacle avoidance strategies to prohibit mid-path collisions and to improve performance. Simulation results are given to demonstrate the capabilities of the proposed techniques. (Received September 07, 2019)