

## Model of Obstacle Avoidance on Hard Disk Drive Manufacturing with Distance Constraint

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**Abstract :** Obstacle avoidance is the one key for the robot system in unknown environment. The robots should be able to know their position and safety region. This research starts on the path planning which are SLAM and AMCL in ROS system. In addition, the best parameters of the obstacle avoidance function are required. In situation on Hard Disk Drive Manufacturing, the distance between robots and obstacles are very serious due to the manufacturing constraint. The simulations are accomplished by the SLAM and AMCL with adaptive velocity and safety region calculation.

**Keywords :** obstacle avoidance, OA, Simultaneous Localization and Mapping, SLAM, Adaptive Monte Carlo Localization, AMCL, KLD sampling, KLD

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