

耕作机器人双三点定位及其目标图拟合控制 Double Three-point Fix and Objective Diagram Fitting Controlling of Farming Robot

阎勤劳 高迟 查光兴 程正伟 薛少平

西北农林科技大学

关键词: 耕作机器人 双三点 拟合 位姿

摘要: 为了提高耕作机器人控制位姿精度, 提出双三点定位和目标图拟合控制方法, 以双三点定位算法与耕作目标图的拟合实现机器人在自主移动过程中的位置定位和姿态定位, 利用激光测距传感器和超声波接收器构建了测试系统并进行了实验。结果表明, 该定位方法提高了运算速度和控制精度, 随着耕作机器人行进速度的提高, 其绝对误差有所增大, 而相对误差明显下降, 耕作机器人对凸出地面的障碍物比较敏感, 增加机器人的质量会增强其稳定性。

In order to raise position and posture precision of farming robot, double three-point fix disposition principle and method of farming autonomous mobile robot were proposed which were used to implement position and posture precision of the robot when it was moving independently, and the laser survey sensor and ultra audible sound receiving sensor were employed to build up the measure and test system and realized examination. The experiments show that operation speed and controlling precision are increased by using the methods, its absolute error is aggrandized, whereas its relative error is reduced obviously, and it is sensitive for barrier on the ground, and its stability can enhance by raising its weight.

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