

عنوان مقاله:

Point to Point Path Planning of Railed Base Dual Arm Manipulators with Obstacles in Their Workspace

محل انتشار:

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خلاصه مقاله:

The path planning of railed mobile base dual arm manipulators with several obstacles in their loadworkspace is studied. The manipulators paths are planned in both Cartesian and joint spaces for similar initial and destination points. Firstly, the differences between path planning algorithms in the Cartesian and joint spaces are described. Then, in a case study, these algorithms are tested considering two rail mounted 3-DOF planner manipulators with same physical and geometrical characteristics. In this case study it is assumed that the load is connected by four cables to the end effectors. The motions variables and torque capacity of manipulators joints to transport the load in its paths are computed in both spaces. Finally, considering simulation results strengths and weaknesses of path planning in the Cartesian and joint spaces are analyzed and compared with each other. It is seen that in the motion planning in joint space, some problems same as load tilting and undesirable torque-force is applied to the actuators, but motion planning is easier and faster.

کلمات کلیدی:

Path Planning, Cooperative manipulators, Obstacles, rail

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