

عنوان مقاله:

An investigation on length variation and its effect on positioning of the linkages of a robot mechanical manipulator (RRT) using direct dynamic method

محل انتشار:

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خلاصه مقاله:

Mechanisms and robots are essential components of any mechanical system. They are used for transmission of force and torque and also for performing a precise motion and work. Dynamic problems are interestingly based on certain essential principles and concepts which are extended to be applicable on a wide range of fields. One of the precious aspects of dynamic studies is experiencing logic on the basis of the principles. This experience can't be acquired through only memorizing kinematic and dynamic formulas which elucidate various motions. Instead, they should be obtained by facing various and widespread problems which lead to choosing, using and generalizing the fundamental principles for meeting the given conditions. Dynamic knowledge plays a critical role for robot control in some applications including fast robots, robots under excessive loads, wide-band robots, and robots with sensitive structure. The present study aims at investigating the variations (increase and decrease) in lengths of linkages of a robot Mechanical Manipulator (RRT) and the effect of individual variation in each linkage on position of other linkages and ultimately on performance of the robot Mechanical Manipulator (RRT). For the purposes of this study we used Matlab (Software and applied direct dynamic method (Newton-Euler Equations).

کلمات کلیدی:

robot mechanical manipulator; direct dynamic; newton-euler equations; linkage

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