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Abstract

The general plane motion guidance of a particle and a rigid-body is an inverse kinematics problem. To accomplish it, we usually could use mechanism or robot manipulator. The mechanism has the limitation of maximum precision points, but robot has not the limitation of maximum precision points because of a robot has many degrees of freedom. In other words, robot can carry out any specified complex motion in its working space. For taking more positions, the robot will not hesitantly be considered. This paper presents some general solutions for robot manipulators to deal with any plane motion guidance problems of a particle and a rigid-body. The program is also be developed by these general mathematical models. Moreover, the robotic profile results can be determined and the animation simulations can also be performed in this program. Two examples are given in this paper to illustrate the program.

Keywords: particle, rigid-body, motion guidance, inverse kinematics, robot, CAD, simulation