MATHEMATICAL MODEL FOR KINEMATICS AND DYNAMICS OF A TREE-LIKE ACTUATOR FOR A HEXAPOD WALKING ROBOT

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Abstract

We propose a kinematic diagram of a tree-like actuator for a hexapod walking robot. We consider mathematical models for actuator kinematics and dynamics of this type of robot. We supply modified Denavit—Hartenberg parameter values, a reachability matrix for the actuator links and the Z vector that characterises where the rotation axes of kinematic pairs are located in three dimensions

Keywords

Hexapod walking robots, synthesis of kinematic structures, modified Denavit—Hartenberg coordinates, reachability matrix, dynamic equation of a hexapod walking robot actuator

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