

ABSTRACT

The present invention relates to a control method for self-collision avoidance of a walking robot equipped with a manipulator and a walking robot performing the same, the control method including the steps of: modeling a first collision-possible part of a manipulator and a second collision-possible part of a robot body into three-dimensional shapes each having line segments and a circular cross section; calculating the shortest distance between a first line segment with respect to the modeled first collision-possible part and a second line segment with respect to the modeled second collision-possible part; calculating a relative Jacobian between first and second points by applying a Jacobian matrix to the first point of the first line segment and the second point of the second line segment connecting the shortest distance; and calculating a speed for avoiding collision between the manipulator and the robot body by using the size of the three-dimensional shapes, the shortest distance between the first and second line segments, and the relative Jacobian between the first and second points.

Fig. 13