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3D modelling and simulation of a crawler robot in ROS/Gazebo

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Abstract

1. Modelling and animation of crawler UGV's caterpillars is a complicated task, which has not been completely resolved in ROS/Gazebo simulators. In this paper, we proposed an approximation of track-terrain interaction of a crawler UGV, perform modelling and simulation of Russian crawler robot "Engineer" within ROS/Gazebo and visualize its motion in ROS/RViz software. Finally, we test the proposed model in heterogeneous robot group navigation scenario within uncertain Gazebo environment. Copyright is held by the owner/author(s). Publication rights licensed to ACM.

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Keywords

Crawler robot, Gazebo, Modeling, Path planning, Rescue robots, ROS, Rviz