MRRT: Multiple Rapidly-Exploring Random Trees for Fast Online Replanning in Dynamic Environments

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Abstract

Motion planning is a fundamental task of determining a collision-free trajectory that drives the robot to a target state in the configuration space, minimizing a user-defined cost function such as trajectory length [1]. It has a wide range of applications for autonomous underwater vehicles (AUVs), such as seabed mapping [2], structural inspection [3], oil spill cleaning [4], mine hunting [5], and other underwa...
connections and expanded simultaneously.

In the full paper, we will present details of the proposed MRRT algorithm and the simulation results of rapid path replanning in an unknown static environment as well as in a dynamic environment containing moving obstacles.

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