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Simulator

This simulator is based on the simulator used in [Fast-Planner](#). It is a lightweight simulator in ROS considering quadrotor's dynamics in $SO(3)$. This simulator has following features:

- $SO(3)$ dynamics
- local sensing
- randomly generated 3D map

Structure

```
├─ ./planner
├─   │├─ ./planner/example
├─   └─ ./planner/traj_utils
└─ ./uav_simulator
    ├── ./uav_simulator/fake_drone
    ├── ./uav_simulator/local_sensing
    ├── ./uav_simulator/map_generator
    ├── ./uav_simulator/mockamap
    ├── ./uav_simulator/so3_control
    ├── ./uav_simulator/so3_quadrotor_simulator
    └─ ./uav_simulator/Utils
        ├── ./uav_simulator/Utils/cmake_utils
        ├── ./uav_simulator/Utils/multi_map_server
        ├── ./uav_simulator/Utils/odom_visualization
        ├── ./uav_simulator/Utils/pose_utils
        ├── ./uav_simulator/Utils/quadrotor_msgs
        ├── ./uav_simulator/Utils/rviz_plugins
        ├── ./uav_simulator/Utils/uav_utils
        └─ ./uav_simulator/Utils/waypoint_generator
```

Installation

```
git clone <this-repo>  
cd <this-repo>  
catkin_make
```

Run a simple demo

```
roslaunch so3_quadrotor_simulator simulation_with_map.launch
```