

Control Theory

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1 Melodic and ubuntu 18.04

You should install melodic version¹ and then catkin for melodic version² of course first you need to install the dependencies which are mentioned at the bottom of this page³

2 Install ROS

3 Install Catkin

4 Setting a new workspace

See Url at footnote ⁴ for a full tutorial from workspace building to adding joints and rizk etc...

if you start from scratch and need to create a new workspace for your project. Let's first source our ROS Hydro environment:

- **Make a workspace** `mkdir -p ~/{}/catkin_ws/src`
- **Navigate to it** `cd ~ /catkin_ws/src`
- **Initi it** `catkin_init_workspace`
- **build of your (empty) workspace just to generate the proper setup files**
 - `cd..`
 - `catkin_make`
- **From now on, each time we'll have to start ROS commands that imply using our packages, we'll have to source the workspace environment in each terminal:** `source ~ /catkin_ws/devel/setup.bash`

¹<http://wiki.ros.org/melodic/Installation/Ubuntu>

²<http://wiki.ros.org/action/fullsearch/catkin?action=fullsearch\&context=180\&value=linkto\%3A\%22catkin\%22>

³<https://stackoverflow.com/questions/58033243/how-to-install-ros-on-ubuntu-18-04>

⁴<https://blog.generationrobots.com/en/robotic-simulation-scenarios-with-gazebo-and-ros/>

5 Multi-Vehicle Simulation with Gazebo

See footnote ⁵

6 Drones

6.1 Multi drones

RotorS Simulator See URL ⁶

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References

⁵<https://dev.px4.io/v1.9.0/en/simulation/multi-vehicle-simulation.html>

⁶<https://www.autonomousrobotslab.com/rotors-simulator.html>