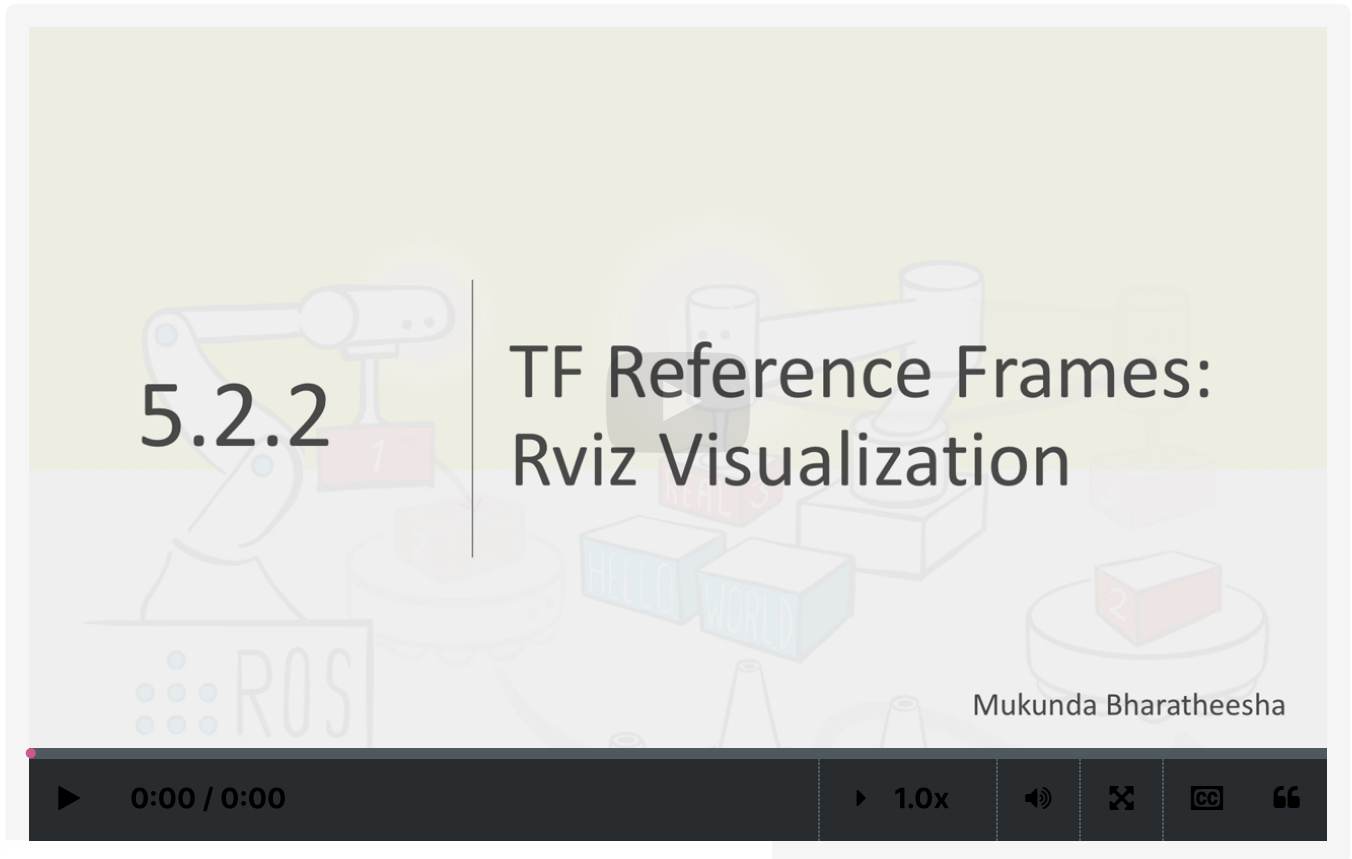


We now know how TF frames get created, and where they are defined. Let's now see them in the context of our factory world!

## Video



Subtitles (captions) in other languages than provided can be viewed at [YouTube](#). Select your language in the CC-button of YouTube

## Launch the factory simulation, with visualization on RViz and NOT the Gazebo gui

You need to add the arguments: `gui:=false rviz:=true` to the `hrwros_enviromtent` launcher.

```
$ roslaunch hrwros_gazebo hrwros_environment.launch  
gui:=false rviz:=true
```

- You will only see the RViz window but gazebo will still run on the background.
  - If you want to, you can also visualize the turtlebot on RViz:
    - Click the "Add" button on the display panel.
    - Select *RobotModel*
    - Change the *RobotDescription* to turtlebot\_description
- 

### Visualize the correct TF frames.

- On the Displays panel (left) in RViz, you enable the option to show all TF links. *There are so many!*

- Turn all of them off by unchecking the All Enabled checkbox.

TF -> Frames -> All Enabled

- Show only the robot2\_pedestal\_link by checking its checkbox.

TF -> Frames -> robot2\_pedestal\_link

- To really see it, you need to disable rendering the robot2\_pedestal\_link in the *RobotModel* section.

RobotModel -> Links -> robot2\_pedestal\_link

- The TF Frame appears on the location of the joint between the world and the robot2 pedestal link. However, since the pedestal is static, the TF is also static.
- To see a moving TF frame, let's enable the TF display frame for the vacuum\_gripper2\_suction\_cup.

TF -> Frames -> vacuum\_gripper2\_suction\_cup

---

### Now let's move the robot to see if the TF frame also moves

- **Switch to a new terminal**, source your setup files, and start MoveIt! Commander.

```
$ rosrn hrwros_week4 hrwros_moveit_commander_cmdline
```

- Select the robot2 for movement

```
> use robot2
```

- Use the go command, to move the robot to the R2Up position.

```
> go R2Up
```

- Try and execute the command while you can also see the TF in RViz! You can see it moving with the arm.
- Move the robot to other positions and see the TF frame moving along with the robot.

This shows that the TF frames are updated by both the robot description parameter **and** the joints state information.

---

## Question 1

1 point possible (ungraded)

TF frames are located at or attached to joint origins. They move along with the links associated with that joint. True or False?

☐ True

☐ False

Submit