

Robot swerving to 1 direction when MPC fails #3795

Unanswered

MrOCW asked this question in Q&A



MrOCW on Aug 31, 2023

edited ▾

With reference to

https://github.com/autowarefoundation/autoware.universe/blob/main/control/mpc_lateral_controller/src/mpc_lateral_controller.cpp#L295

I will see "MPC is not solved. publish 0 velocity." when my robot swerves to the right/left and drives up the curb or collide with something if i do not stop it. Why is the steering angle not 0 and why is the longitudinal controller not publishing 0 velocity?

I have tried creating a client at

https://github.com/autowarefoundation/autoware.universe/blob/main/control/mpc_lateral_controller/src/mpc_lateral_controller.cpp#L295 and calling the

service to change_to_stop. The Autoware State Panel OperationMode shows STOP after MPC fails, but the robot continues driving left/right

The logs shows this when the swerving happens:

```
{"log":["component_container_mt-54] [WARN] [1693473751.7225206] [behavior_path_planner.path_shifter]: No need to consider lateral acc limit. max: 0.086050, limit: 0.500000\n","..."}
{"log":["system_error_monitor-21] [WARN] [1693473753.449993973] [system_error_monitor /autoware/vehicle/node_alive_monitoring]: [Latent Fault]: Warning\n","st..."}
{"log":["system_error_monitor-21] [WARN] [1693473753.452171934] [system_error_monitor /autoware/vehicle/node_alive_monitoring/topic_status/topic_state_mon vehicle_topic_status]: [Latent Fault]: Warn\n","stream":"st..."}
{"log":["system_error_monitor-21] [WARN] [1693473753.452200992] [system_error_monitor /autoware/vehicle/node_alive_monitoring/topic_status/topic_state_mon vehicle_topic_status]: [Latent Fault]: Warn\n","stream":"..."}
{"log":["component_container-60] [INFO] [1693473753.862540431] [control.trajectory_follower.controller_node_exe]: target speed \u003e 0, but keep stop condition is met. Keep STOPPED.\n","str..."}
{"log":["component_container_mt-54] [WARN] [1693473754.826172104] [behavior_path_planner.path_shifter]: No need to consider lateral acc limit. max: 0.086050, limit: 0.500000\n","stre..."}
{"log":["component_container_mt-61] [INFO] [1693473756.445005736] [default_ad_api.node.motion]: client call: /control/vehicle_cmd_gate/set_pause\n","stream":..."}
{"log":["component_container-60] [INFO] [1693473756.446894302] [control.vehicle_cmd_gate]: server call: /control/vehicle_cmd_gate/set_pause\n","stream":..."}
{"log":["component_container-60] [INFO] [1693473756.448228049] [control.vehicle_cmd_gate]: server exit: /control/vehicle_cmd_gate/set_pause\n",...}
```

Category



Q&A

Labels

None yet

1 participant



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{"log":"[component_container_mt-61] [INFO] [1693473756.448549957]
[default_ad_api.node.motion]: client exit:
/control/vehicle_cmd_gate/set_pause\n", "...
{"log":"[component_container_mt-54] [WARN] [1693473757.832319740]
[behavior_path_planner.path_shifter]: No need to consider lateral
acc limit. max: 0.086049, limit: 0.500000\n", "...
{"log":"[component_container_mt-54] [WARN] [1693473758.024474927]
[planning.scenario_planning.lane_driving.behavior_planning.behavior
unsafe. but could not transit yield
status.\n", "stream":"stdout", "time":"2023-08-
31T09:22:38.025450123Z"}
{"log":"[system_error_monitor-21] [WARN] [1693473758.550077711]
[system_error_monitor /autoware/vehicle/node_alive_monitoring]:
[Latent Fault]: Warning\n", "stream":"stdout", "time":"2023-08-
31T09:22:38.55136912Z"}
{"log":"[system_error_monitor-21] [WARN] [1693473758.550135635]
[system_error_monitor
/autoware/vehicle/node_alive_monitoring/topic_status/topic_state_mon
vehicle_topic_status]: [Latent Fault]:
Warn\n", "stream":"stdout", "time":"2023-08-
31T09:22:38.551533738Z"}
{"log":"[system_error_monitor-21] [WARN] [1693473758.550144884]
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vehicle_topic_status]: [Latent Fault]:
Warn\n", "stream":"stdout", "time":"2023-08-31T09:22:38.55178569Z"}
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unsafe. but could not transit yield
status.\n", "stream":"stdout", "time":"2023-08-
31T09:22:40.622770222Z"}
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[behavior_path_planner.path_shifter]: No need to consider lateral
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0.500000\n", "stream":"stdout", "time":"2023-08-
31T09:22:40.916170483Z"}
{"log":"[system_error_monitor-21] [WARN] [1693473761.249369029]
[system_error_monitor
/autoware/control/autonomous_driving/performance_monitoring/lane_dej
[Latent Fault]: Warning\n", "stream":"stdout", "time":"2023-08-
31T09:22:41.250595281Z"}
{"log":"[system_error_monitor-21] [WARN] [1693473761.249428361]
[system_error_monitor
/autoware/control/autonomous_driving/performance_monitoring/lane_dej
lane_departure]: [Latent Fault]: vehicle will leave
lane\n", "stream":"stdout", "time":"2023-08-
31T09:22:41.250659349Z"}
{"log":"[ndt_scan_matcher-31] [INFO] [1693473762.119687081]
[localization.pose_estimator.ndt_scan_matcher]: Start updating
NDT map (timer_callback)\n", "stream":"stdout", "time":"2023-08-
31T09:22:42.121278187Z"}
{"log":"[ndt_scan_matcher-31] [INFO] [1693473762.119833042]
[localization.pose_estimator.ndt_scan_matcher]: waiting
response\n", "stream":"stdout", "time":"2023-08-
31T09:22:42.121630305Z"}
{"log":"[ndt_scan_matcher-31] [INFO] [1693473762.120131716]
[localization.pose_estimator.ndt_scan_matcher]: Update map (Add:
0, Remove: 0)\n", "stream":"stdout", "time":"2023-08-
31T09:22:42.122950099Z"}
{"log":"[ndt_scan_matcher-31] [INFO] [1693473762.120179815]
[localization.pose_estimator.ndt_scan_matcher]: Skip map
update\n", "stream":"stdout", "time":"2023-08-
31T09:22:42.123031064Z"}
{"log":"[system_error_monitor-21] [ERROR] [1693473762.249308316]
[system_error_monitor
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/autoware/control/autonomous_driving/performance_monitoring/lane_dej
[Single Point Fault]: Error\n","stream":"stdout","time":"2023-08-
31T09:22:42.250575563Z"}
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[system_error_monitor
/autoware/control/autonomous_driving/performance_monitoring/lane_dej
lane_departure]: [Single Point Fault]: vehicle is out of
lane\n","stream":"stdout","time":"2023-08-
31T09:22:42.251664142Z"}
{"log":"[system_error_monitor-21] [WARN] [1693473763.649727468]
[system_error_monitor /autoware/vehicle/node_alive_monitoring]:
[Latent Fault]: Warning\n","stream":"stdout","time":"2023-08-
31T09:22:43.651027452Z"}
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/autoware/vehicle/node_alive_monitoring/topic_status/topic_state_moi
vehicle_topic_status]: [Latent Fault]:
Warn\n","stream":"stdout","time":"2023-08-
31T09:22:43.656394248Z"}
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vehicle_topic_status]: [Latent Fault]: Warn\n",.....
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[behavior_path_planner.path_shifter]: No need to consider lateral
acc limit. max: 0.084524, limit:
0.500000\n","stream":"stdout","time":"2023-08-
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[behavior_path_planner.path_shifter]: No need to consider lateral
acc limit. max: 0.086056, limit:
0.500000\n","stream":"stdout","time":"2023-08-
31T09:22:46.925703142Z"}
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/autoware/control/autonomous_driving/performance_monitoring/lane_dej
[Single Point Fault]: Error\n","stream":"stdout","time":"2023-08-
31T09:22:47.253141353Z"}
{"log":"[system_error_monitor-21] [ERROR] [1693473767.252013156]
[system_error_monitor
/autoware/control/autonomous_driving/performance_monitoring/lane_dej
lane_departure]: [Single Point Fault]: vehicle is out of
lane\n","stream":"stdout","time":"2023-08-
31T09:22:47.253299442Z"}
{"log":"[system_error_monitor-21] [WARN] [1693473768.750945916]
[system_error_monitor /autoware/vehicle/node_alive_monitoring]:
[Latent Fault]: Warning\n","stream":"stdout","time":"2023-08-
31T09:22:48.752155206Z"}
{"log":"[system_error_monitor-21] [WARN] [1693473768.751121831]
[system_error_monitor
/autoware/vehicle/node_alive_monitoring/topic_status/topic_state_moi
vehicle_topic_status]: [Latent Fault]: Warn\n",.....
{"log":"[system_error_monitor-21] [WARN] [1693473768.751408888]
[system_error_monitor
/autoware/vehicle/node_alive_monitoring/topic_status/topic_state_moi
vehicle_topic_status]: [Latent Fault]: Warn\n","stream":".....
{"log":"[component_container-60] [WARN] [1693473770.451397283]
[control.trajectory_follower.controller_node_exe]: Too large yaw
error: 0.791685 \u003e 0.785000\n"....
{"log":"[component_container-60] [WARN] [1693473770.451489736]
[control.trajectory_follower.controller_node_exe]: fail to get
MPC Data. Stop MPC.\n",.....
{"log":"[component_container-60] [WARN] [1693473770.451597263]
```

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[control.trajectory_follower.controller_node_exe]: MPC is not  
solved. publish 0 velocity.\n".....
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Which node publishes what topic for the vehicle to stop?

↑ 1

0 comments