```
nav2_core::Controller
 cl nav2z::backward
  _local__planner::BackwardLocal
            Planner
- nh
name_
 backwardsPlanPath
- costmapRos_
tf_
 goalMarkerPublisher_
planPub_
 k_rho_
k_alpha_
 k_betta
 pure_spinning_allowed
   betta_error
       _mode_rho_error
- linear_
 _threshold
alpha_offset_
betta_offset_
 max_linear_x_speed_
 max_angular_z_speed_
- yaw goal tolerance
 xy_goal_tolerance_
carrot_distance_
 carrot_angular_distance
divergenceDetectionLastCarrot
 LinearDistance_

    transform_tolerance_
```

waitingTimeout\_waitingStamp\_goalReached\_

SpinningMode\_

waiting

+ configure()+ activate()+ deactivate()+ cleanup()+ setPlan()

initialPureSpinningStage\_straightBackwardsAndPure

enable\_obstacle\_checking\_inGoalPureSpinningState\_

currentCarrotPoseIndex\_+ BackwardLocalPlanner()+ ~BackwardLocalPlanner()

+ computeVelocityCommands()

computeCurrentEuclideanAnd AngularErrorsToCarrotGoal()

checkCurrentPoseInGoalRange()
resetDivergenceDetection()
divergenceDetectionUpdate()
checkCarrotHalfPlainConstraint()

checkGoalReached()

generateTrajectory()
computeNewPositions()

+ isGoalReached()
+ setSpeedLimit()
- updateParameters()
- findInitialCarrotGoal()
- updateCarrotGoal()
- resamplePrecisePlan()
- straightBackwardsAndPure

SpinCmd() clearMarkers() publishGoalMarker()