

Run and evaluate a simulation

1) Run the LMPC simulator

```
Terminal
ugo@ugo-MacBookPro ~/GitHub/barc (LMPC) $ roslaunch barc barc_sim.launch
```

2) After few laps interrupt the ROS simulator using Cntl+C

```
^C[low_level_controller-6] killing on exit
[state_estimation_dynamic-5] killing on exit
[barc_sim-4] killing on exit
[control-3] killing on exit
[barc_record-2] killing on exit
Current Lap: 10, It: 54
Finished coefficients, t = 0.002158929 s
Solved, status = Optimal
Exiting node... Saving data to /home/ugo/simulations/output-SIM-9fea.jld. Simulated 159.03 seconds.
Exiting node... Saving recorded data to /home/ugo/simulations/output-record-9fea.jld.
Exiting LMPC node. Saved data to /home/ugo/simulations/output-LMPC-9fea.jld.
[rosout-1] killing on exit
[master] killing on exit
shutting down processing monitor...
... shutting down processing monitor complete
done
ugo@ugo-MacBookPro ~/GitHub/barc (LMPC) $
```

3) Annotate the 4-digit identification code (Circled in red in the figure below)

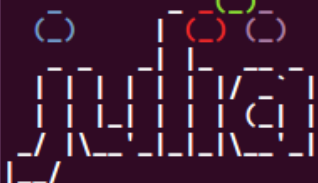
```
^C[low_level_controller-6] killing on exit
[state_estimation_dynamic-5] killing on exit
[barc_sim-4] killing on exit
[control-3] killing on exit
[barc_record-2] killing on exit
Current Lap: 10, It: 54
Finished coefficients, t = 0.002158929 s
Solved, status = Optimal
Exiting node... Saving data to /home/ugo/simulations/output-SIM-9fea.jld. Simulated 159.03 seconds.
Exiting node... Saving recorded data to /home/ugo/simulations/output-record-9fea.jld.
Exiting LMPC node. Saved data to /home/ugo/simulations/output-LMPC-9fea.jld.
[rosout-1] killing on exit
[master] killing on exit
shutting down processing monitor...
... shutting down processing monitor complete
done
ugo@ugo-MacBookPro ~/GitHub/barc (LMPC) $
```

```

/home/ugo/GitHub/barc/workspace/src/barc/launch/barc_sim.launch ht
ugo@ugo-MacBookPro ~/GitHub/barc/eval_sim (LMPC) $ julia

```

```
/home/ugo/GitHub/barc/workspace/src/barc/launch/barc_sim.launch http://localhost:11311
ugo@ugo-MacBookPro ~/GitHub/barc/eval_sim (LMPC) $ julia
```

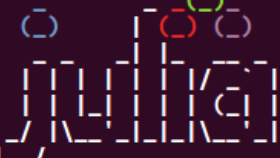


```
| A fresh approach to technical computing
| Documentation: http://docs.julialang.org
| Type "?help" for help.
```

```
| Version 0.4.7 (2016-09-18 16:17 UTC)
| Official http://julialang.org/ release
|x86_64-pc-linux-gnu
```

```
julia> include("eval_data.jl")
```

```
/home/ugo/GitHub/barc/workspace/src/barc/launch/barc_sim.launch http://localhost:11311
ugo@ugo-MacBookPro ~/GitHub/barc/eval_sim (LMPC) $ julia
```



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Version 0.4.7 (2016-09-18 16:17 UTC)
Official <http://julialang.org/> release
x86_64-pc-linux-gnu

```
julia> include("eval_data.jl")
smooth (generic function with 1 method)
```

```
julia> eval_sim("9fea")
```

The file `eval_data.jl` includes different functions for plotting. These functions are described in the `README.md` file