Supplementary Reading for Module 4, Lesson 1: Kinematic Modeling in 2D

Read more about 2D plan motion and coordinate frames in the PDF below:

Chapter 2, "Models of Mobile Robots in the Plane" B.A. Francis and M. Maggiore, *Flocking and Rendezvous in Distributed Robotics*, SpringerBriefs in Control, Automation and Robotics (2016), https://www.springer.com/cda/content/document/cda_downloaddocument/9783319247274-c2.pdf?SGWID=0-0-45-1532785-p177708750.

Supplementary Reading: The Kinematic Bicycle Model

Read more about the Kinematic Bicycle Model (pages 15-26) in the PDF below:

"Chapter 2, Lateral Vehicle Dynamics", R. Rajamani, Vehicle Dynamics and Control, Mechanical Engineering Series, https://www.springer.com/cda/content/document/cda_downloaddocument/9781461414322-c1.pdf?SGWID=0-0-45-1265143-p174267791. (2012)

Supplementary Reading: Dynamic Modeling in 3D

Read more about the fundamentals of dynamics and vehicle dynamics in the textbooks and links below:

General Dynamics:

Ardema, Mark D. *Newton-Euler Dynamics*, Springer: Santa Clara University, Santa Clara (2005).

Tong, David. *Classical Dynamics* University of Cambridge Course Notes (2004)

Vehicle Modeling:

Rajamani, Rajesh. *Vehicle dynamics and control,* Springer Science & Business Media (2011).

Jacobson, Bengt, et al. *Vehicle Dynamics,* Vehicle Dynamics Group, Division of Vehicle and Autonomous Systems, Department of Applied Mechanics, Chalmers University of Technology (2016)

Supplementary Reading: Longitudinal Vehicle Modeling

To learn more about longitudinal dynamics and vehicle drivetrain, read Chapter 4 in the textbook below:

Rajamani R. (2012) "Longitudinal Vehicle Dynamics." In: Vehicle Dynamics and Control. Mechanical Engineering Series. Springer, Boston, MA. http://link.springer.com/content/pdf/10.1007%2F978-1-4614-1433-9_4.pdf.

Supplementary Reading: Lateral Dynamics of Bicycle Model

Read more about the Lateral Dynamics of Bicycle Model (pages 27-44) in the PDF below:

R. Rajamani (2012), "Lateral Vehicle Dynamics" In: Vehicle Dynamics and Control, Mechanical Engineering Series, https://www.springer.com/cda/content/document/cda_downloaddocument/9781461414322-c1.pdf?SGWID=0-0-45-1265143-p174267791.

Supplementary Reading: Vehicle Actuation

Read more about vehicle steering system in the Journal article below:

Reimann G., Brenner P., Büring H. (2015) "Steering Actuator Systems". In: Winner H., Hakuli S., Lotz F., Singer C. (eds) *Handbook of Driver Assistance Systems*. Springer, Cham

Read more about vehicle driveline (throttling and braking system) in the textbook below:

Mashadi, B., Crolla, D, *Vehicle Powertrain Systems*. Wiley (2012)

Supplementary Reading: Tire Slip and Modeling

Read more about different tire model and formulation in the PDF below:

Moad Kissai, Bruno Monsuez, Adriana Tapus, Didier Martinez. "A new linear tire model with varying parameters". 2017 2nd IEEE International Conference on Intelligent Transportation Engineering (ICITE), Sep 2017, Singapore, Singapore. IEEE, Intelligent Transportation Engineering (ICITE), 2017 2nd IEEE International Conference on. <10.1109/ICITE.2017.8056891>. https://hal.archives-ouvertes.fr/hal-01690792/