Tutorials for Week 7 – Manipulator Dynamics

Advanced Robotic Systems – MANU2453

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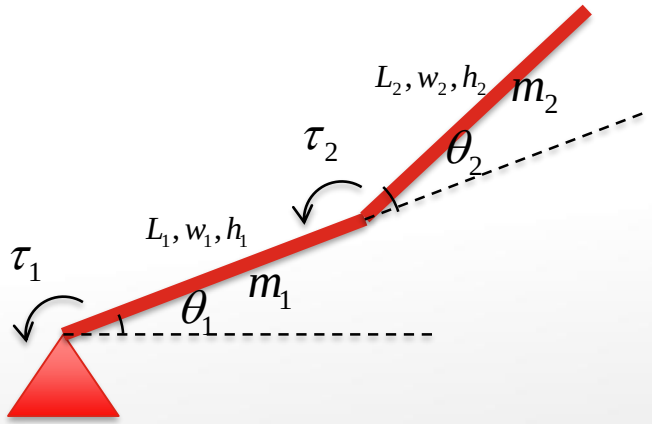
Tutorial Assignments

- **Question 1:**
  - The following two-link robot has each link as a rectangular solid of homogenous density.
  - Each link has dimension l_i, w_i, h_i, and a total mass of m_i.



  - Derive the dynamic equations using Lagrangian method.

Tutorial Assignments

- **Question 2:**
  - For the same robot in Question 1:
  - (a) Write the dynamic equation, when each joint is subject to viscous and coulomb friction.
  - (b) Calculate the dynamic model in Cartesian space.

Tutorial Assignments

- **Question 3:**
  - For the same robot in Question 1:
  - Derive the dynamic equation using the Explicit method.

Thank you!

Have a good evening.

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