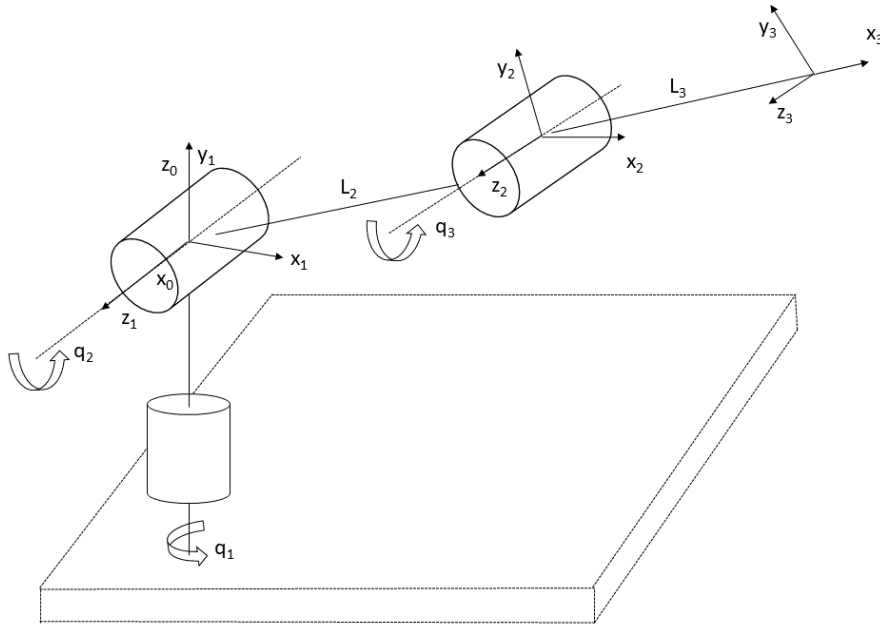# HW2-Problem

February 7, 2019

Figure 1: Hint: The first and the second joint are co-located.

Question 1

a) For the given manipulator in figure 1, find the DH parameters and derive the expression for the geometric Jacobian matrix.

b) From now on assume that $L_2 = L_3$. Find for what joint angles we have singularity points

c) With the help of your findings in question b) (including $L_2 = L_3$), Jacobian, Calculate for which joint angles the end-effector only can move in one direction (either x_0, y_0, or z_0).