

**D-H Frame Rules**

**Rule 1:** The Z-axis must be the axis of rotation for a revolute joint

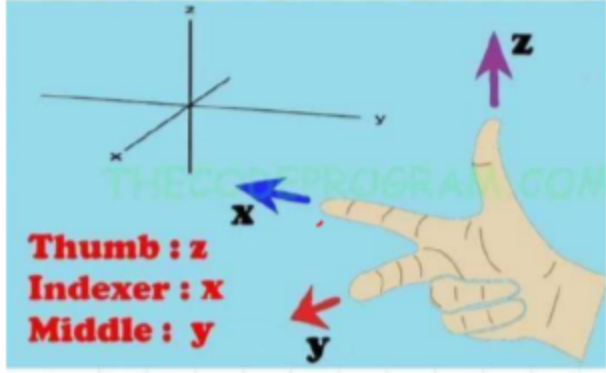
**Rule 2:** The X-axis must be perpendicular to its own Z-axis and to the Z-axis of the previous frame

**Rule 3:** Each X-axis must intersect the Z-axis of the previous frame

**Note if Rule 3 is not satisfied:**

- Translate the axis until it hits the other

**Rule for Y-axis:**



**Rotation and Translation Parameters**

**$\Theta$**

Rotation around  $z_{n-1}$  by  $\Theta$ , that is required to match  $x_{n-1}$  with  $x_n$

**$\alpha$**

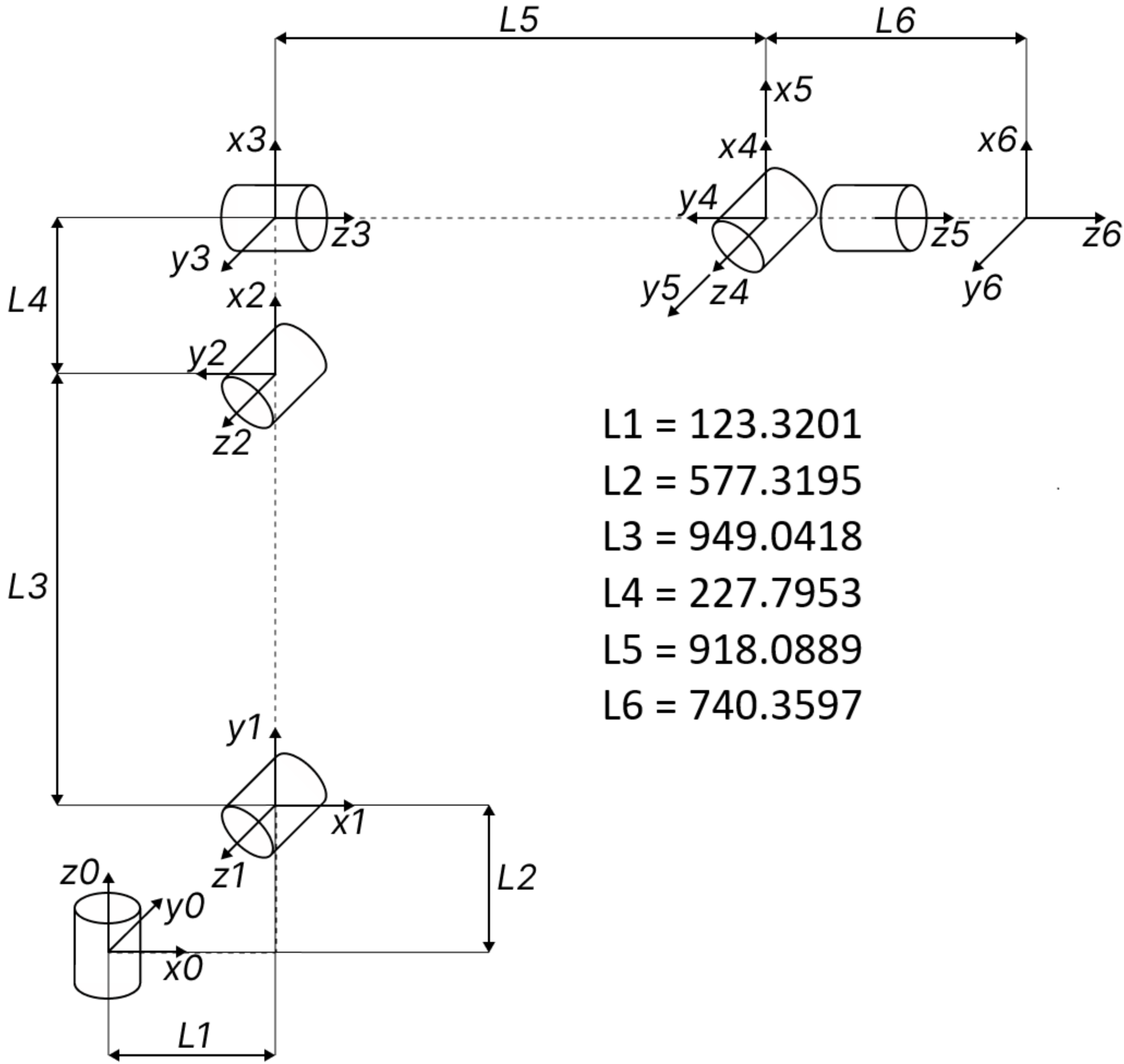
Rotation around  $x_n$  by  $\alpha$ , that is required to match  $z_{n-1}$  with  $z_n$

**$d$**

Distance between origins  $n-1$  and  $n$ , along axis  $z_{n-1}$

**$r$**

Distance between origins  $n-1$  and  $n$ , along axis  $x_n$



$L1 = 123.3201$   
 $L2 = 577.3195$   
 $L3 = 949.0418$   
 $L4 = 227.7953$   
 $L5 = 918.0889$   
 $L6 = 740.3597$

$n$	$\theta$	$\alpha$	$r$	$d$
1	$\theta$	$90^\circ$	$L1$	$L2$
2	$\theta + 90^\circ$	$0^\circ$	$L3$	0
3	$\theta$	$90^\circ$	$L4$	0
4	$\theta$	$270^\circ$	0	$L5$
5	$\theta$	$90^\circ$	0	0
6	$\theta$	$0^\circ$	0	$L6$

