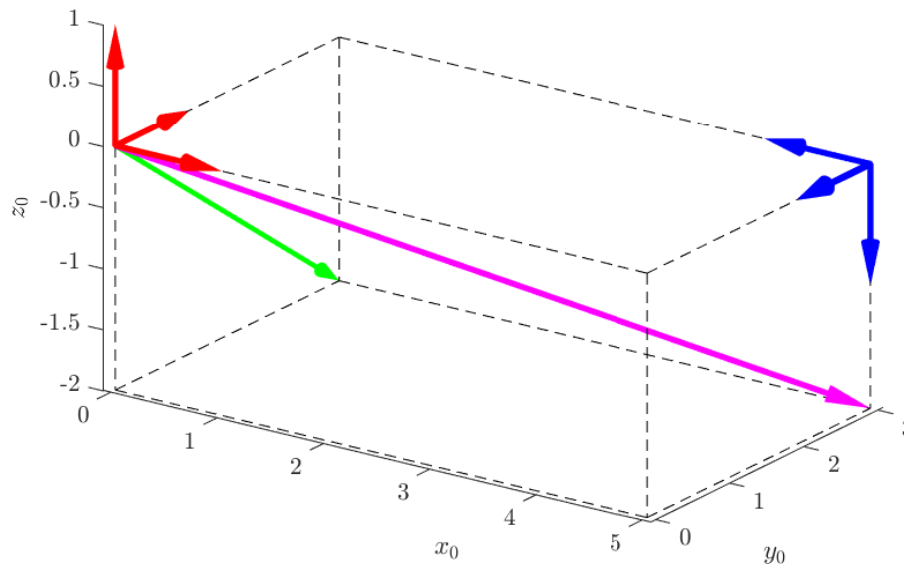


### Exercise 1: Coordinate transformation

Consider Exercise 1 in the exercise material. Open the file „Exercise01.m“ and do the following at the section „Solution“:

- Set  $l$  to 5,  $h$  to 3 and  $w$  to 2.
- Create a variable called `rot0R1` that represents the rotation matrix  ${}^0\mathbf{R}_1$ .
- Create two variables called `vec0a` and `vec0b` that represent the vectors  ${}^0\mathbf{a}$  and  ${}^0\mathbf{b}$ .
- Calculate the transformed vectors `vec1a` and `vec1b` representing  ${}^1\mathbf{a}$  and  ${}^1\mathbf{b}$ . Compare them to the calculated vectors in the exercise using  $l = 5$ ,  $h = 3$  and  $w = 2$ .
- Run the program. You should see the following result:



You will see that

- ...the frame  $\mathcal{K}_0$  will be displayed in red color,
- ...the frame  $\mathcal{K}_1$  will be displayed in blue color,
- ...the vector  $\mathbf{a}$  will be displayed in green and
- ...the vector  $\mathbf{b}$  will be displayed in magenta.